TEXTILE WORLD

A McGraw-Hill Publication — APRIL • 1948

KNIT-GOODS FIN... ANNUAL KNITTING NUMBER

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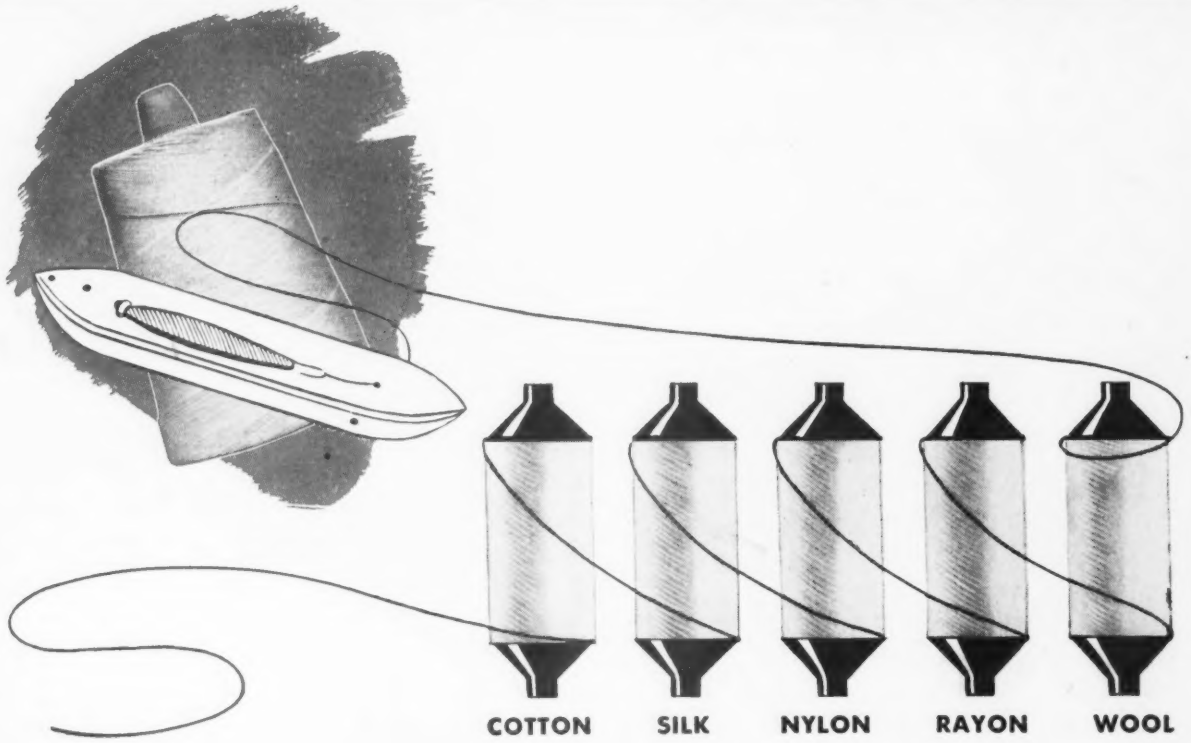

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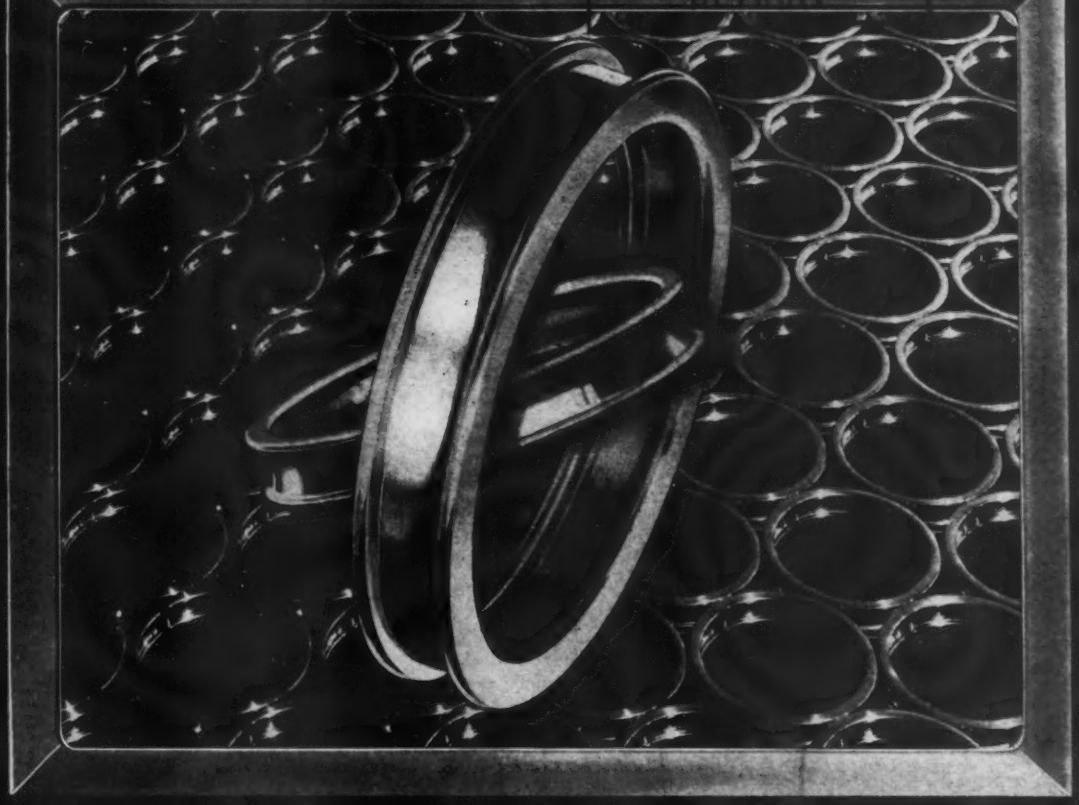

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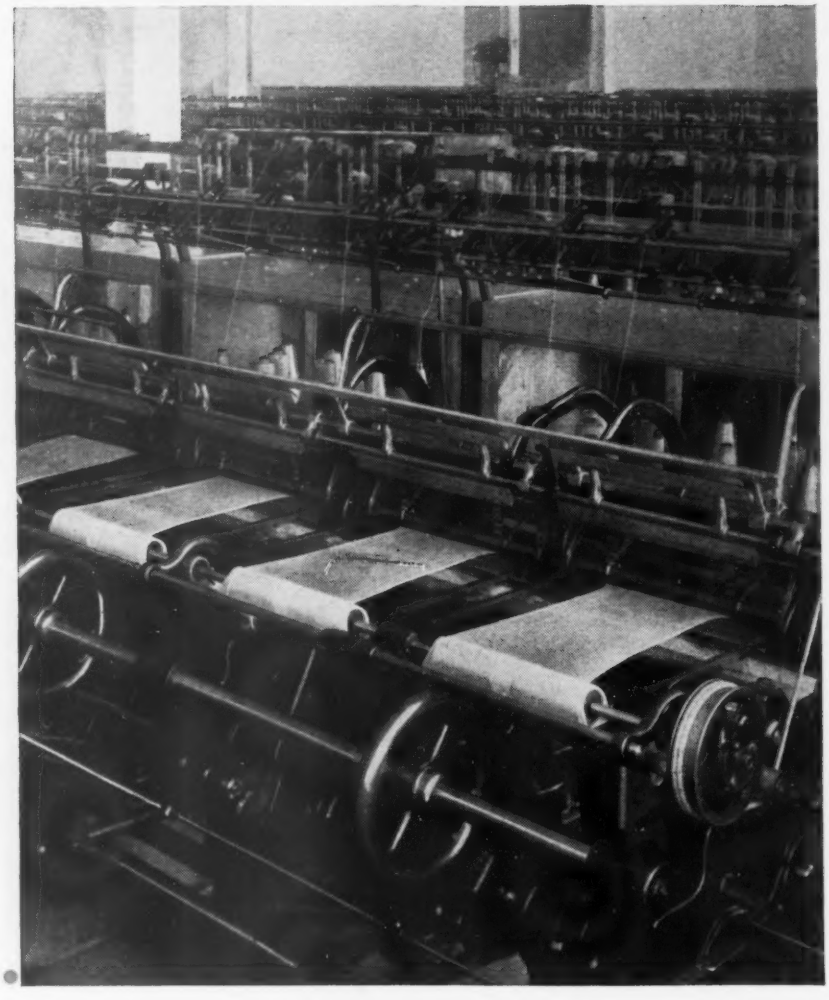

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TEXTILE WORLD

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A McGRAW-HILL PUBLICATION

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JAMES H. McGRAW 1860-1948

A tribute by HENRY G. LORD, Vice President of McGraw-Hill Publishing Co. and Founder of Textile World

With the death of James H. McGraw in California on Feb. 21, a great industrial pioneer publisher passed away. From 1884 until his retirement in 1935, he was an acknowledged leader and more perhaps than anyone else responsible for the development of a branch of the publishing business which has become an integral and important part in the growth of American industry.

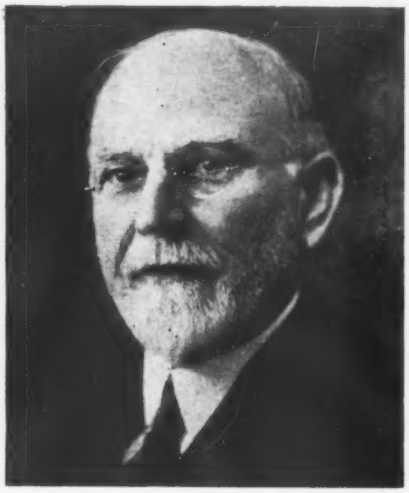
Born in Panama, Chautauqua County, N. Y., he attended district and normal schools and became a teacher. When, at the age of 24, he gave up his job as principal of the high school in Fredonia, N. Y., to come to New York city to sell subscriptions on a small trade paper in the railway field, his trend of mind and experience as a teacher led him to realize that the future of the little trade papers of those early days was dependent on their editorial excellence and ability to obtain and publish material which would not only record and teach, but stimulate the achievement and progress of the industries they represented.

The first paper of which he soon became owner was *The Street Railway Journal*, then a horse-car paper. He foresaw the changes to come and made it *The Electric Railway Journal*, which pioneered the great development of electric transportation. It became a prosperous publication and was then followed by *The Electrical World*, *Engineering Record*, *Chemical Engineering*, and *Electrical Merchandising*.

I first knew him in 1886 in Boston, when he used to stop in occasionally at the office of Joseph Wade and myself, who had started a little textile paper called *Fibre and Fabric*.

There were very few business papers in those days, no publishers' associations, no generally accepted policies, no audited circulations. It was a great privilege for me with my very limited publishing experience to have an opportunity to discuss with him the many problems and the future possibilities of our specialized publications. The main objective, of course, was to make a living, and that was not too easy in a new and comparatively uncharted field of business. But James McGraw had very definite ideas about business papers and what their policies should be. They must be made to command respect through editorial independence and leadership. They must state their circulation, so that advertisers would know what they were buying. The rates must be fixed and the same for all. They must be spark plugs for, and not barnacles on, the industries they were a part of.

These policies seem so self-evident today that it is hard to realize what a struggle McGraw and some of the rest of us had to put them into successful practice.



In the early years of the century, he founded and acquired other publications. In 1916 following the death of John A. Hill, another pioneer publisher, the Hill publications were merged with the McGraw papers, and the McGraw-Hill Publishing Co. was formed. With that merger *The American Machinist*, *Coal Age*, and *Engineering and Mining Journal* came under his direction. Meantime the McGraw-Hill Book Co. in 1909 had merged the book departments of the two companies, and began its great development.

Still other business magazines were acquired or started to cover the various branches of the mechanical, chemical, and electrical industries.

He was a forceful and convincing speaker and a real crusader for the causes he believed in. He was never satisfied with present accomplishment. He was the least complacent man I ever knew. Quick to recognize good work by his editors and business staff, his praise was always accompanied by an appeal for even better things. He insisted that his editors should spend the major part of their time in the field and not at their desks. He believed in research to ascertain facts and information that would be helpful to the advertisers and aid his editors and managers in making better papers.

It was indirectly because of this research department that I became associated with him in business. In our many years of friendship, we had occasionally discussed the possible advantages of merging my textile publications with his large group. One day when I was in his office, he showed me some charts prepared by the research department. One of these was a large pie chart divided into segments showing the major divisions of the manufacturing industries—electrical, machine tools, chemical engineering, power plants, construction, textile manufacturing, etc. In each of these segments except textile was the name of a McGraw-Hill paper that served that group of industry. Turning to me, he said, "Henry, why not fill in that textile segment with TEXTILE WORLD and become a member of our group?"

There was much to recommend it; and some time after, in 1928, the merger was made and our friendship of many years continued as an equally pleasant business association.

When he retired from active business, his responsibilities were taken over by his son, James H. McGraw, Jr., as president and chairman of the board.

Other sons are Harold W. McGraw, vice president in charge of the McGraw-Hill Building; Curtis W. McGraw, vice president and treasurer; and Donald C. McGraw, vice president in charge of manufacturing. I still continue my pleasant association with them.

After his retirement, Mr. McGraw went to California to live; but failing health restricted his enjoyment of his well-earned leisure; and after a long illness he passed away in his 88th year.

He lived to see the largest industrial publishing business in the world develop from his small beginning along the lines that he had formulated. The McGraw-Hill Publishing Co. now publishes twenty-six national and eight international magazines; and its subsidiary, the McGraw-Hill Book Co., is the largest concern specializing in technical and educational books.

He was the recipient of many awards and several honorary degrees for his accomplishments, including the Bok Gold Medal for distinguished service rendered American commerce and industry.

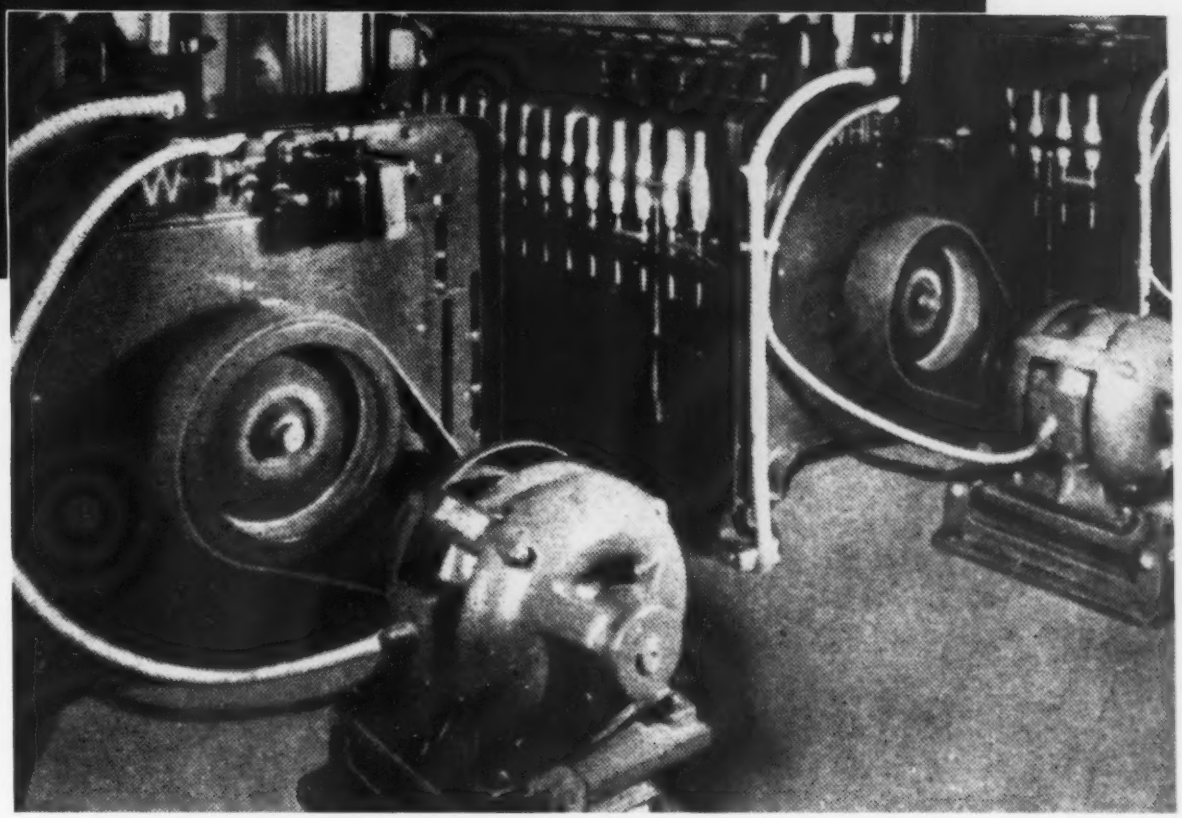
He established the James H. McGraw Award to encourage advancement in the electrical industries. He took an active part in public and civic affairs and was a member of many societies and clubs. He was a good citizen.

James H. McGraw was a man of great vision, good judgment, indomitable will, and persistence in carrying out sound plans. He was a great builder of men. He had uncanny ability to choose, train, and encourage men to develop themselves and work together to build the publications of which he was justly proud.

He has left a proven publishing creed for his associates and a name in the industrial and scientific world which will always be linked with the branch of the publishing business which he so largely developed.

Henry G. Lord

INCREASE PRODUCTION...LOWER COSTS



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ANOTHER point of cleaning

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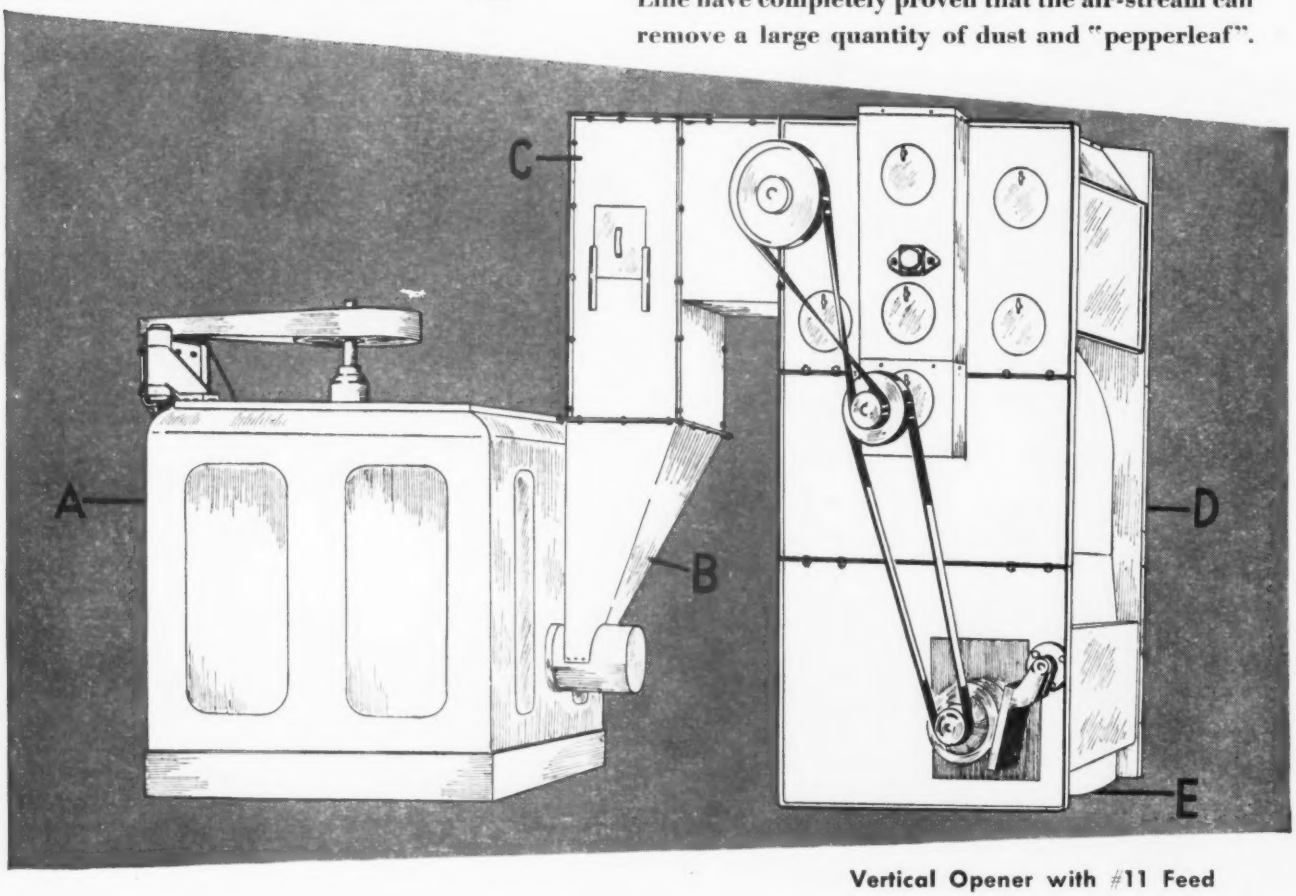

Vertical Opener with #11 Feed

A — Vertical Opener
B — Connecting Trunk
C — Reserve Box
D — #11 Dust & Waste Extractor
E — Discharge to #6 Air Filter.

It has been standard practice to utilize the blooming and cleaning action of the #11 Dust and Waste Extractor by using this machine as the feeding unit for the #12 Lattice Opener. The success of the unit at this point prompted us to install the #11 before the Vertical Opener.

The stock is carried from the feed table to the screen section of the #11 Extractor by the air current generated by the fan of the unit. The clean stock is condensed on the screen while the light particles of dirt and the dust are pulled by the air current, thus separating trash from the good fiber.

The Reserve Box of the #11 Dust and Waste Extractor provides a means of feeding the stock to the Vertical Opener more evenly, thus eliminating chokes, and making possible the formation of a more uniform feed to the remainder of the Opening Line.

We would be pleased to have an opportunity to discuss this installation with you and to recommend means of improving the performance of your Opening Line.

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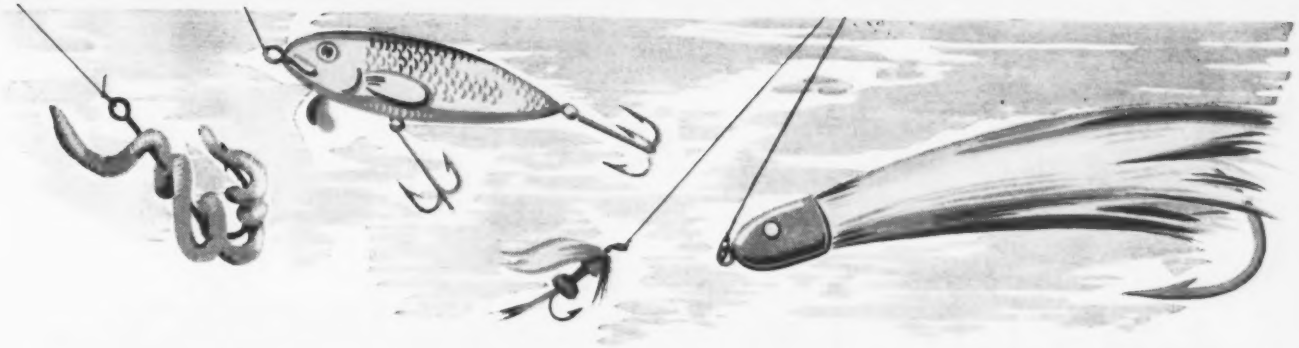

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WORMS are OK for perch, but using them for marlin is just about as unprofitable as trying to use the same type of V-belt under all variations of V-drive operating conditions. That's why Goodyear offers industry's most complete line of V-belts — *a special construction to satisfy every drive requirement.*

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GOODYEAR

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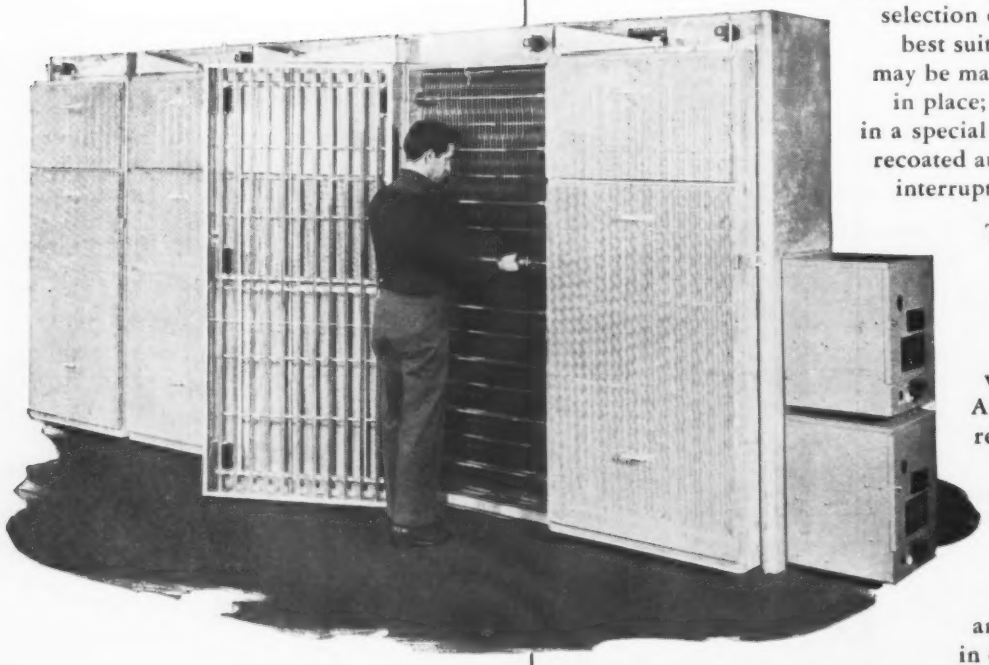
YOU get super-clean air at a saving with the installation of an AAF Electro-Cell. This modern electronic precipitator gives positive protection against dust and soot—even down to such fractional micron sizes that its true efficiency can only be evaluated by the Discoloration Method of testing.



Removable collector plate cells permit selection of the maintenance method best suited to your operation. Cells may be manually washed and re-oiled in place; removed for easy cleaning in a special tank, or washed, dried and recoated automatically with minimum interruption to operation.

The Electro-Cell's sectional construction reduces weight of parts, eliminates multiplicity of electrical connections, protects wiring from dirt and water. And its full-height hinged or removable ionizers minimize electrical losses, reduce ozone and simplify replacement of ionizing wires.

If you want positive protection against soot and dust plus proven savings in operation and maintenance, get complete Electro-Cell data now. Just contact your local AAF representative or write direct for Bulletin No. 252.

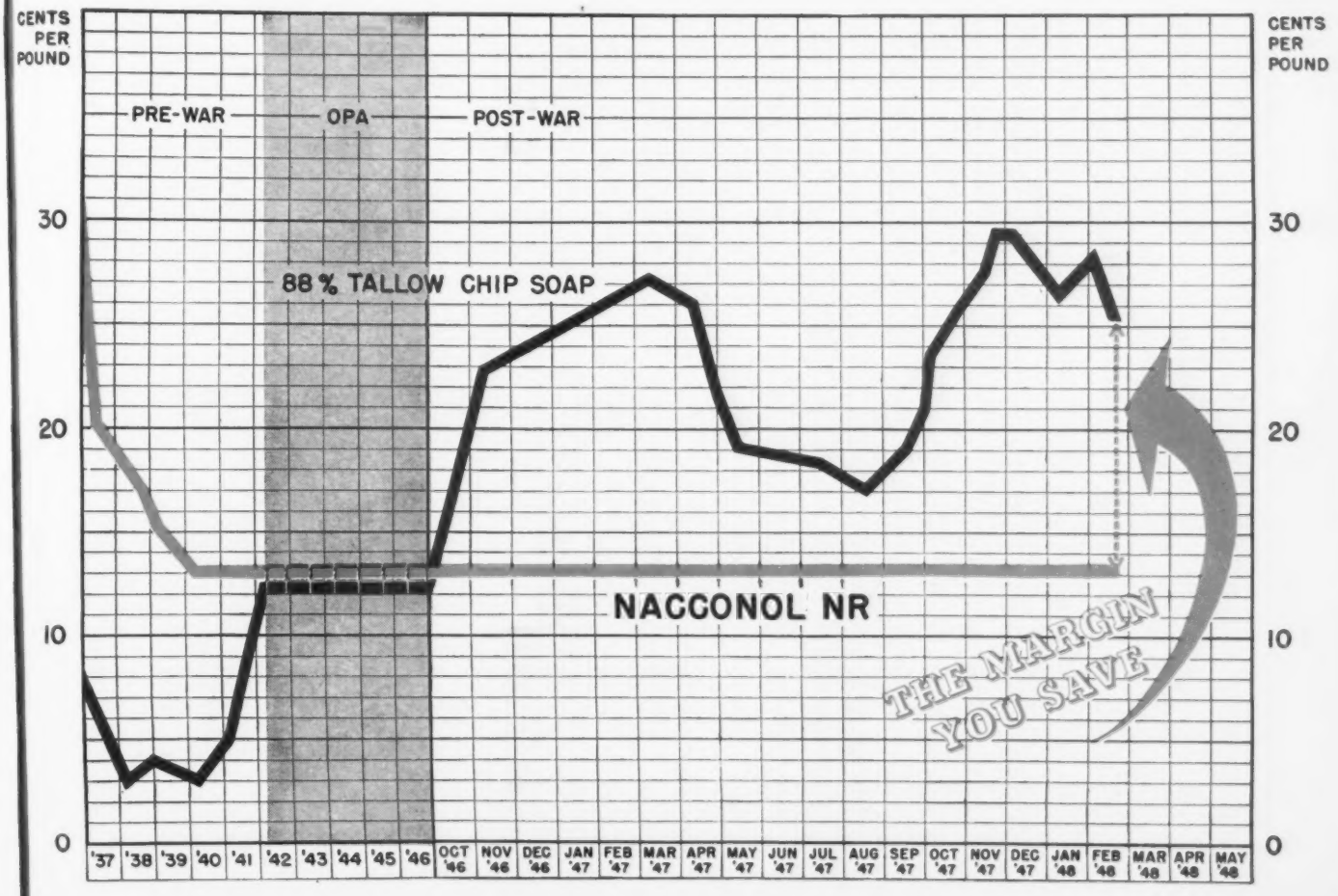
AMERICAN AIR FILTER COMPANY, INC.
304 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

AAF

AIR FILTERS
AND DUST CONTROL EQUIPMENT

Pictures Speak Louder Than Words

COST COMPARISON - NACCONOL NR vs SOAP


CENTS PER POUND
CENTS PER POUND
PRE-WAR
OPA
POST-WAR
30
20
10
0
88% TALLOW CHIP SOAP
NACCONOL NR
THE MARGIN YOU SAVE
'37 '38 '39 '40 '41 '42 '43 '44 '45 '46 OCT '46 NOV '46 DEC '46 JAN '47 FEB '47 MAR '47 APR '47 MAY '47 JUN '47 JUL '47 AUG '47 SEP '47 OCT '47 NOV '47 DEC '47 JAN '48 FEB '48 MAR '48 APR '48 MAY '48

Adopt **NACCONOL NR**
and cut your soap costs

National Aniline DIVISION - ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR ST., NEW YORK 6, N. Y. - BOSTON - PROVIDENCE - PHILADELPHIA - CHICAGO - SAN FRANCISCO - PORTLAND, ORE. GREENSBORO - CHARLOTTE - ATLANTA - NEW ORLEANS - CINCINNATI - TORONTO

never underestimate your need for AIR

This fellow did! But someone may save him yet. Perhaps it's his first experience, or maybe he didn't heed the warnings.

Did you ever stop to consider how essential *Air Power* is to your shop or factory? And how Compressors, Air Tools, and air appliances do wear out eventually, or become inefficient in comparison with modern ones?

Have you found so many uses for *Air Power* that your compressors and piping are too small, making your workers use air at low, less-efficient pressures? Remember too, your plant has grown . . . methods have changed.

At present you may be using very little air, or perhaps none at all, but never overlook the tremendous possibilities and advantages of Air Power. *Never underestimate your need for Air.* Call in an Ingersoll-Rand Air-Power Specialist. He can help you.

77-1

COMPRESSORS • AIR TOOLS
ROCK DRILLS • TURBO BLOWERS
CENTRIFUGAL PUMPS • CONDENSERS
OIL & GAS ENGINES

Ingersoll-Rand

11 Broadway, New York 4, N. Y.

Nothing Rolls Like a Ball . . .

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • Division of GENERAL MOTORS • BRISTOL, CONNECTICUT • Branches in all principal cities

A.P.T. *Tapered* WARP SPINNING BOBBIN

Standard Equipment Because It's a Product of Teamwork

The A. P. T. Tapered Warp Spinning Bobbin is the achievement of a team, a team with "know how" working in close collaboration for more than 10 years. Leading machinery manufacturers and textile technicians cooperated fully with A. P. T. engineers to produce this bobbin, which is now accepted as standard throughout the industry.

Three unique advantages of this bobbin are as follows:—

1. More and better spinning production due to the tapered construction of the bobbin. The larger diameter at the bottom puts less strain on the yarn at the start of the spin, and the tapered construction equalizes the tension over the full length of the traverse and permits larger packages of better production with fewer ends down.

2. More and better production in spooling and rewinding operations. The yarn comes off better from a tapered bobbin.

3. Finger tip seating. Spindle tip suspension and tough but resilient construction of bobbins permit positive seating with finger tip pressure. Thus the bobbins come off easily.

OTHER ADVANTAGES

Like other A. P. T. Yarn Carriers, this tube is made of laminated paper impregnated for moisture resistance and hardened by baking. It is highly resistant to distortion, chipping and splitting, will not splinter and is free from static. Deep, well rounded corrugations permit free but controlled delivery.

Give these superior carriers a chance to improve the quality of your production and to reduce costs. They are adaptable to the spinning, twisting or weaving of all types of fibres.

AMERICAN PAPER TUBE COMPANY

Established 1898

WOONSOCKET, R. I. • GREENVILLE, S. C.

CANADIAN REPRESENTATIVES:

HUGH WILLIAMS & COMPANY, TORONTO, CANADA

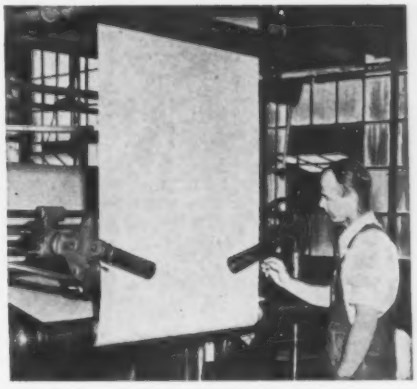
Wool
Cotton
Rayon

What's your problem?

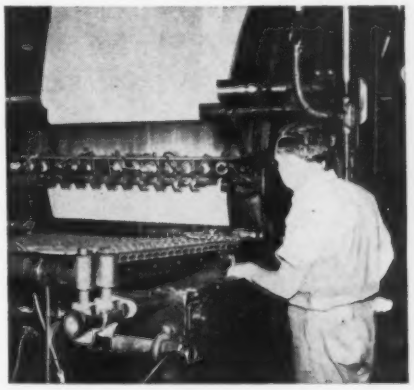
One of these Process Products may improve your Operations...Cut Costs

WOOLENS . . . S/V Woolrex Oils, sprayed on your stock, give you longer card runs before stripping, keep fibers soft and pliable during spinning, and then scour out easily with minimum amounts of soap. Get full details.

WORSTEDS . . . With S/V Worstex Oils, you can be sure of lofty white tops that *stay* white. You get uniform drawing and gilling, cleaner drawing rolls and more continuous operation. Spinning is improved.



COTTONS (FINISHING) . . . For finishing operations on cotton fabrics, you'll get excellent results with S/V Finishing Oils A and B. These products form highly dispersed emulsions, penetrate into the fibers.



COTTONS (PRE-SHRINKING) . . . In pre-shrinking operations, S/V Finishing Oils assure quick, uniform rewetting. They have proved their superiority in such fabrics as twills, drills and denim, as well as in lighter materials.

COTTON (WATER-REPELLENTS) . . . S/V Fabrisecs AA, BB, MP, add maximum water repellency to your fabrics with minimum amounts used. They're unaffected by atmospheric temperatures and have no objectionable odor.

RAYONS . . . If you're processing rayons, investigate Socony-Vacuum's special oils for your operations—S/V Rayon Soaking Oil, S/V Rayon Coning Oil, and S/V Prorex Oil F, for delustering viscose rayon yarns.

Socony-Vacuum Process Products

Process Products
SOCONY-VACUUM

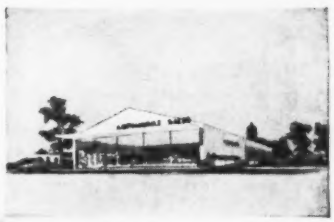
SOCONY-VACUUM OIL CO., INC., 26 Broadway, New York 4, N. Y., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

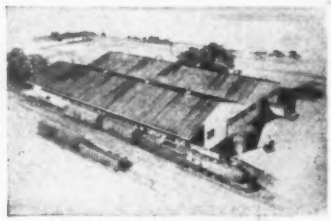
LURIA INDUSTRIAL BUILDINGS

NOW IN PRODUCTION

LURIA STANDARD BUILDINGS are permanent structures designed for maximum utility and flexibility. Large door openings, ample eave height and unobstructed clearance to the rafters make these buildings adaptable for innumerable uses. The unit system of expansion both in width and length combined with a choice in location of doors and sash provide unlimited variation in size and arrangement. These features allow a selection of combinations that are calculated to meet most individual requirements, thereby eliminating the expense of special engineering and gaining the benefit of production line economy. Simplicity of design featuring prefabricated frames of structural steel, insures easy handling and economical erection.

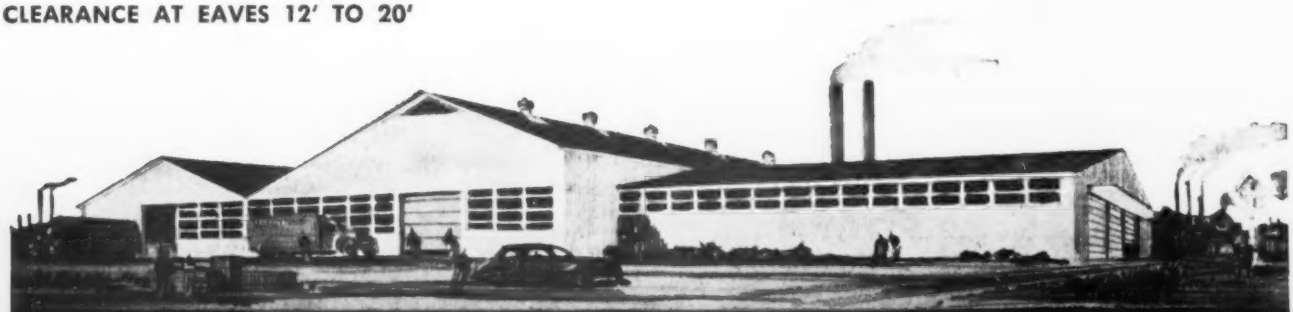
Corrugated steel sheets provide the most economical covering and are widely used with structural frame buildings. An additional feature of the Luria Structures is that they are designed to accommodate various types of collateral materials. This is important where requirements dictate the use of particular materials and also gives the advantage of greater freedom in architectural treatment.





ADAPTATIONS OF STANDARD UNITS

BASIC UNIT WIDTHS 40′ TO 100′ CLEAR SPAN
LENGTH ADJUSTABLE IN INCREMENTS OF 20′
CLEARANCE AT EAVES 12′ TO 20′



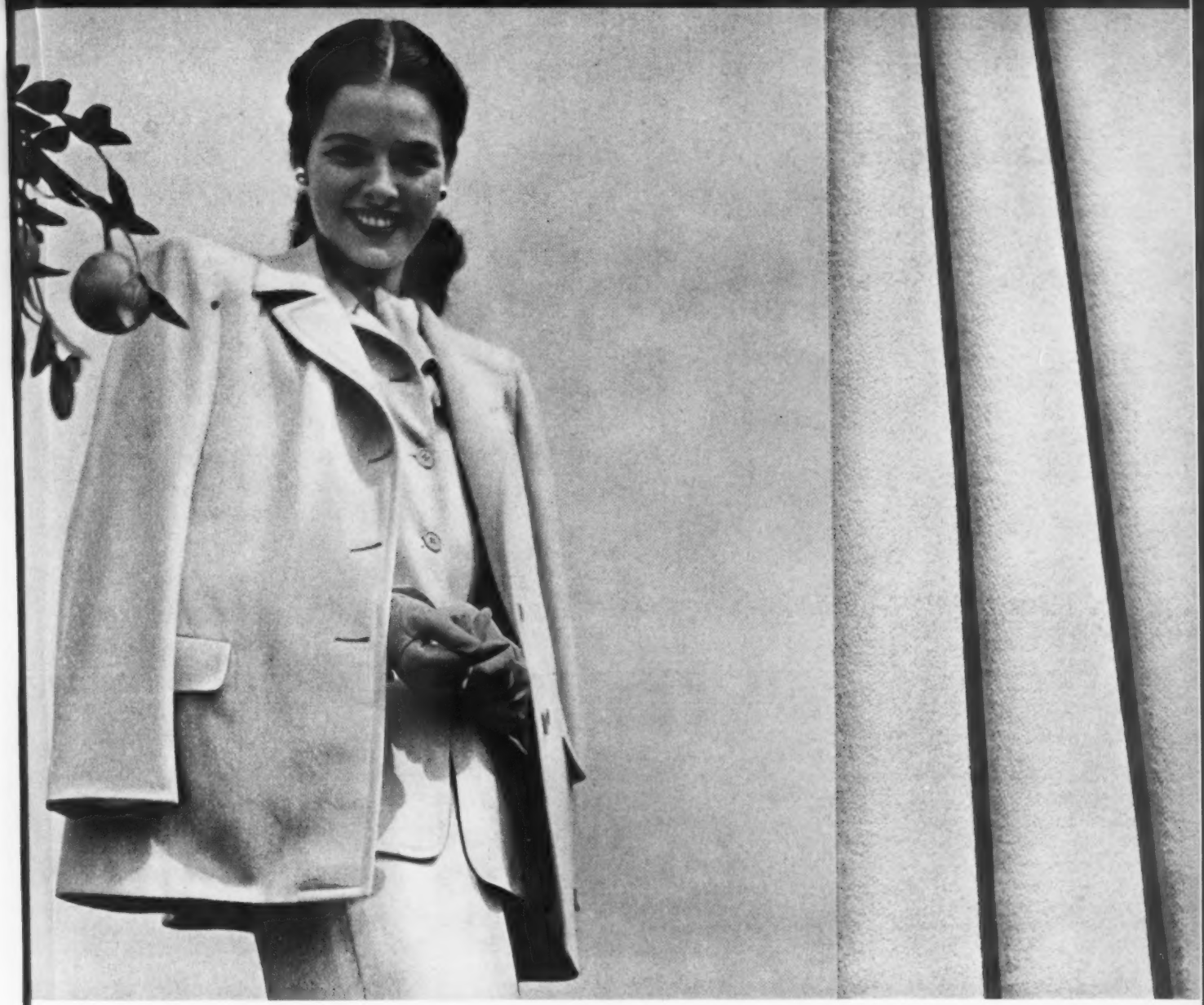
LURIA ENGINEERING CORPORATION

500 Fifth Avenue, New York 18, N. Y.

1734 Candler Bldg., Atlanta 3, Georgia

First National Bank Bldg., Chicago 3, Illinois

SANDOZ PRESENTS *The color achievement of the month*



Cornfield Covert BY MILLIKEN

Rosenblum of California made up this suit and topper from Milliken's 100% virgin wool covert — a sleek, fine-textured fabric that sends a young lady into April with feel-right, look-right confidence.

The color is called "Cornfield"... Milliken's idea of the "light look" for spring. And for the dyestuffs that make such colors possible — clear and true and fast-to-wear — Milliken includes Sandoz among its suppliers. From the broad Sandoz line, Milliken selects colors which please boss dyers for their efficient processing properties as much as they please designers for their fashion-rightness.

For clear light shades on ladies' wear, many mills standardize on —

ALIZARINE LIGHT BLUE 4GL
AZO RUBINOLE 2GS
XYLENE LIGHT YELLOW 2G

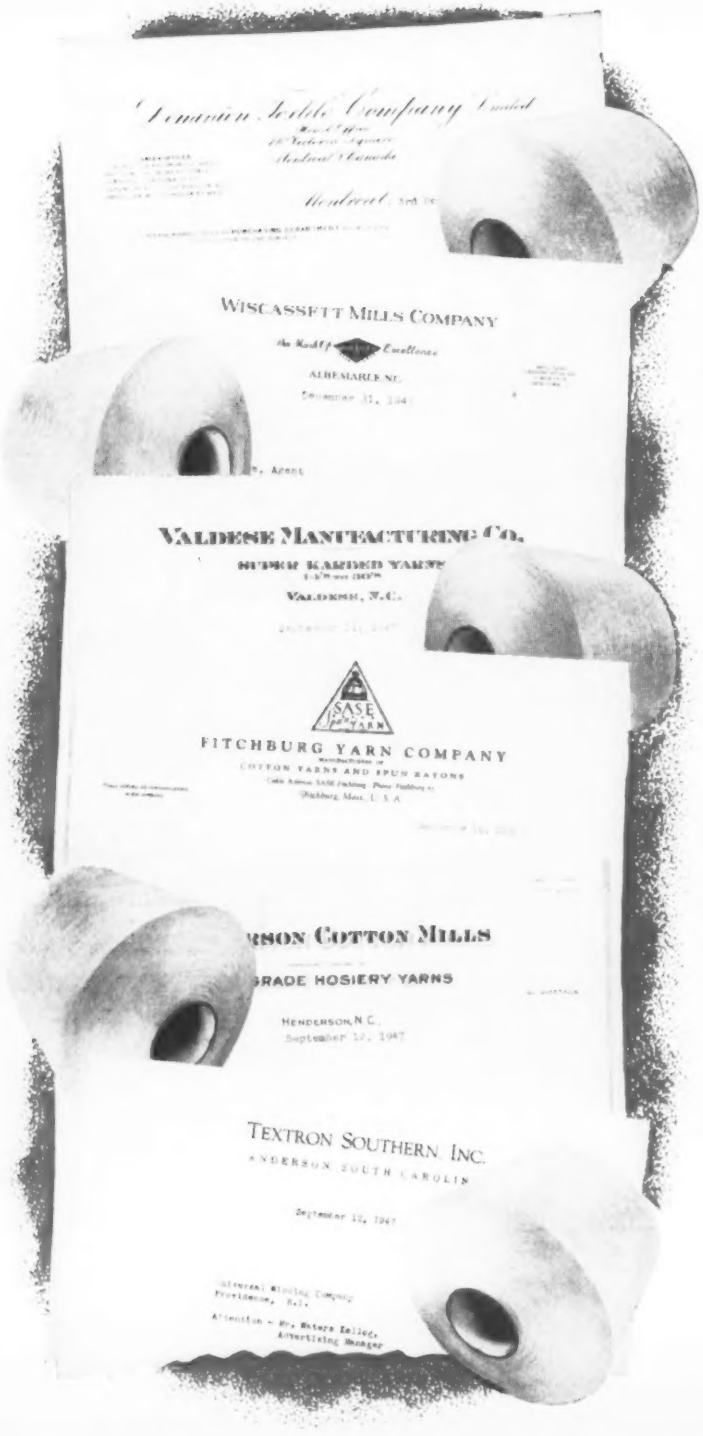
The level dyeing of this combination minimizes seconds and re-dyes and produces maximum light fastness for acid piece dyes.

For acid, chrome or direct dyes... or auxiliary chemicals... for both natural and synthetic fibres... be guided by the successful "color achievements" you see in these Sandoz advertisements.

You are invited to call upon our application laboratories.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. • Other branches at Providence, Paterson, Chicago.

SANDOZ *thinks ahead with textiles*



THE "WHO'S WHO" IN COTTON SPINNING KNOW "WHAT'S WHAT" IN CONE WINDING

Your cue to the latest practice in cone winding is the fact that more mills are replacing old equipment with Roto-Coners* than with any other make.

Mills like those represented here — always in the forefront of technical progress — are fast standardizing on the modern winding machine with the exclusive Rotary Traverse.

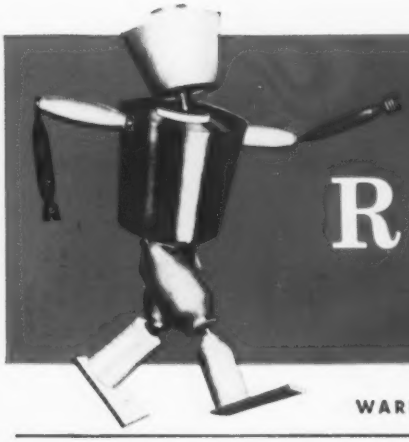
They are winding at higher speeds (up to 550 ypm), paying less for maintenance (under ½ of 1% on investment per year), improving working conditions (machine is quiet, clean, easy to operate), producing better quality cones (uniform, free from roll-cuts and underwinds, accurately inspected).

On both counts — cost and quality — the Roto-Coner* has become the No. 1 machine for open-wind knitting cones.

UNIVERSAL WINDING COMPANY

Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England, Paris, France; Basle, Switzerland.

Agents in every principal textile center in the world.



LEESONA
REG. U.S. PAT. OFF.

ROTO-CONER*

Open-Wind Cones for Knitting

WARPING CONES — DYEING PACKAGES — PARALLEL TUBES FOR TWISTING

IT'S EASY to see that the size of the valve is out of proportion—but not so much if you think of *all valves* in this building as *one valve.* Collectively, valves represent an investment bigger than the cost of many large units always carefully chosen for operating economy.

That's why, today, with maintenance wages and material costs higher than ever before, alert management must keep a sharp eye on valve performance.

EXCESSIVE MAINTENANCE of one inferior valve is insignificant, but, multiplied by thousands, it becomes a serious drain on operating budgets, and often contributes to slowdowns that reduce productivity.

JENKINS BROS. helps you meet this problem two ways. First, by building extra endurance into Jenkins Valves, making them the longest-lasting, lowest-upkeep valves that money can buy. Second, with advice from Jenkins Engineers on any question of proper selection, installation, or maintenance.

For all new installations, for all replacements, rely on Jenkins quality and engineering service for lowest valve costs in the long run. *Sold through leading Industrial Distributors everywhere.*

•

Jenkins Bros., 80 White St., New York 13; Bridgeport, Conn.; Atlanta; Boston; Philadelphia; Chicago; San Francisco. Jenkins Bros., Ltd., Montreal.

"PREVENT VALVE FAILURE" is a 28-page guide to valve economy, fully illustrated, with case histories of valve damage, and recommendations for its prevention by proper selection, installation, inspection, and maintenance. FREE on request. Write: JENKINS BROS., 80 White St., New York 13, N. Y.

LOOK FOR THIS JENKINS DIAMOND MARK

SINCE 1864

JENKINS VALVES

Types, Sizes, Pressures, Metals for Every Need

TWO WIN

with GEON for Films and Coatings

The ultimate consumer and the manufacturer *both* gain advantages where Geon polyvinyl materials are used for calendering and solution coating.

GEON RESINS
for Calendering and Solution Coating

Easy to process on standard equipment . . . Easy to compound to get useful properties to fill specific needs—30 possible desirable qualities in all, ranging from soft hand to abrasion resistance—and including both.

GEON POLYBLENDS
for Calendering and Solution Coating

A combination of Geon and Hycar American Rubber which allows a finish using no extractable plasticizer. It can be readily cemented to itself and to other materials. Retains desirable qualities of both vinyl resin and nitrile rubber.

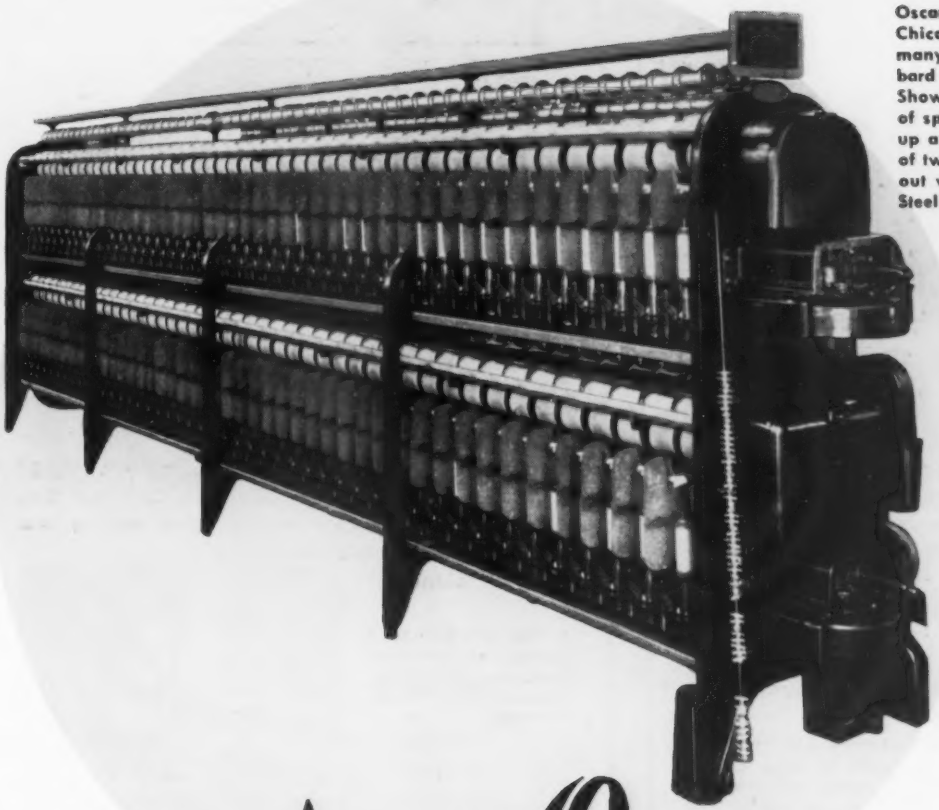
GEON LATICES
for dipping, spreading, coating or sizing

Water-borne vinyl resins which permit low-cost, easy processing. 50% solids content. Eliminates toxic and fire hazards which are present in solvent systems. No expensive solvent recovery equipment needed.

GEON PASTE RESINS
for spread coating, dipping or other coating operations

A wide range of processing advantages are opened up with new paste resin-plasticizer combinations. Heavy coatings can be deposited in a single operation. No fabric shrinkage. No coating distortions. No volatiles need be used.

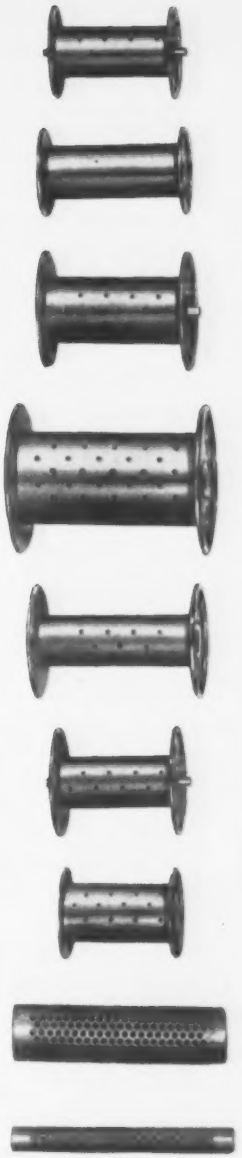
Throughout the whole textile field, Geon is helping open the way to new opportunities, new methods, new markets. We make no finished products from these raw materials. We are interested, however, in helping to solve any problems of special application. For more information please write Dept. M-2, B. F. Goodrich Chemical Company, 324 Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.



Oscar Heineman Corporation, Chicago, Illinois, is one of many satisfied users of Hubbard Stainless Steel Bobbins. Shown here is one of a floor of spinning machines. Take-up and steaming operations of twisted thread are carried out with Hubbard Stainless Steel Bobbins.

Try them Once...

and you'll want no other type

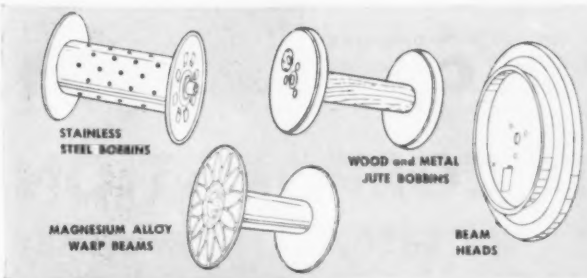


Hubbard STAINLESS STEEL BOBBINS give you every cost saving advantage you want . . . the structural strength of steel to eliminate distortion and breakage . . . and the resistance of 18-8 stainless alloy to corrosion and dye absorption. For example, you will find that Hubbard stainless steel bobbins have ample strength to stand up indefinitely under steaming operations, no matter what the amount of thread shrinkage and pressure might be. One reason for this is Hubbard design . . . based on over 35 years of specialized experience in spool engineering and manufacture.

PROMPT DELIVERY is offered to you in any quantity you require in a full range of standard sizes. Write for complete information and price quotation.

HUBBARD SPOOL COMPANY

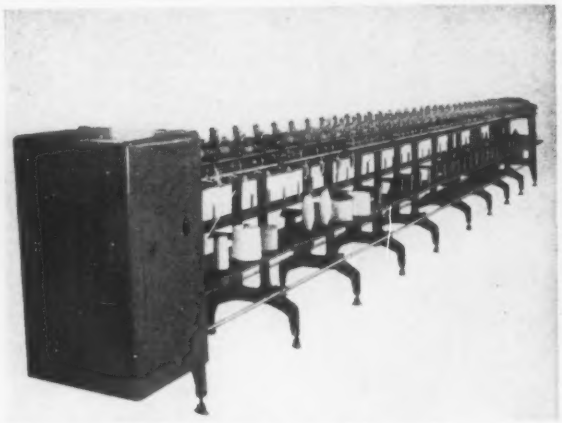
1626 Carroll Avenue • Chicago 12, Illinois



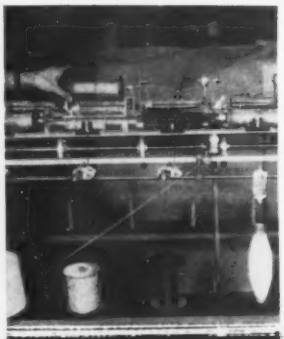
Hubbard

Since 1912 Manufacturers of Spools and Related Products

SIPP-EASTWOOD EQUIPMENT FOR BETTER PRODUCTION



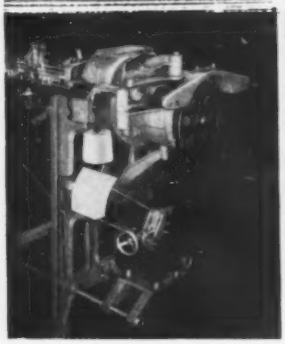
This new Sipp-Eastwood Winder-Redraw makes possible smoother traverse and higher speeds than with conventional redraws. The speed is limited only by the strength of yarn—500 yards per minute or more.

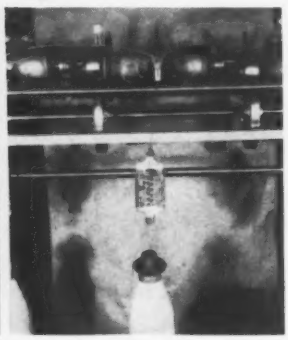


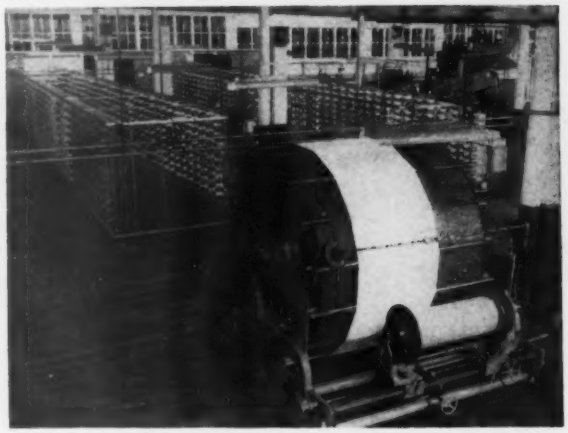
1—Quick, easy doffing. Note self-opening spindleless attachment. Self-threading alsimag guide and revolving pulley tension.

2—Improved drive allows for quick changes of traverse, speeds and warps.

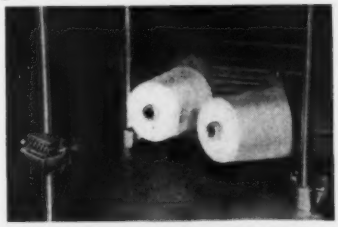
3 — (Below) Washboard tension. Our standard gate tension is particularly adapted for redrawing nylon.



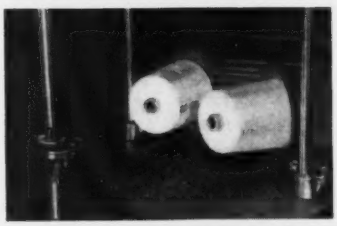




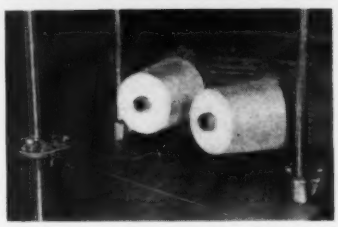
Sipp-Eastwood Over-end Magazine Cone Creel and Horizontal High Speed Warper for high speed warping from cones, spools, tubes, or pirns.



1—Our gate type creel tension of hardened steel, gray satin finish, chromium plated to resist wear.



2—Pulley type creel tension. Retarding action is obtained by friction applied to the rotating members—not to the yarn.



3—Washer type creel tension. Employs double set of washers, giving perfect tension for fiber yarns, as well as for fine denier flat yarns.

THE DENSIMETER

Measures density of cops, quills, spools, and other packages. Used in conjunction with the Tensometer to assure uniform density of packages.

THE TENSOMETER
New sturdy model.

Measures tension of yarns and aids in the prevention of seconds in woven fabrics due to uneven tensions in warping, winding and quilling.

ITS A TRADE MARK SIPP EASTWOOD

SIPP-EASTWOOD CORPORATION

47 KEEN STREET — PATERSON 4, NEW JERSEY

Brushes with a Heart of Aluminum

Jenkins Textile Brushes Feature Aluminum Cores for Longer Life and Increased Efficiency—

M. W. Jenkins' Sons, Inc., Cedar Grove, N. J. have been supplying brushes to the textile industry since 1877. And during these 71 years this progressive manufacturer has taken advantage of every modern material to improve the quality and performance of its products.

That's why, today, the cores of many of these brushes are made of Reynolds cold drawn aluminum tubing. Unlike wood, aluminum isn't affected by moisture; can't dry out, crack or warp. This never varying, rigid metal support makes for a brush that remains straight, runs true; assures even pressure throughout and longer bristle life. And because this aluminum core is practically indestructible it can be refilled with new bristle as often as the bristle needs replacement.

Where can Reynolds aluminum tubing and extrusions help to lighten the weight, lengthen the life, lower the cost and improve the performance of your product? A Reynolds textile engineer will be glad to help supply the answers. Just write our nearest field service office, or Industrial Machinery Division, Reynolds Metals Company, 310 Hanna Building, Cleveland 15, Ohio.

REYNOLDS METALS COMPANY, Aluminum Division, Louisville 1, Ky.

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS METALS

REYNOLDS *Lifetime* ALUMINUM

REYNOLDS' PIONEERING MADE ALUMINUM COMPETITIVE . . . TAKE ADVANTAGE OF IT!

You Can Increase

⬅ BETWEEN POWER LINE

CONTROL

DISTRIBUTION TRANSFORMER

This Important Link Can Affect

THROUGHOUT YOUR MILL, every step in production depends in some degree on the performance of this vital equipment between power line and machine. By reducing unproductive down time — by providing correct operating speeds — by assuring efficient distribution and control of electric power — you can, in effect, increase the production of every machine in the mill. Isn't this worth a careful check? Call in an Allis-Chalmers expert to make an analysis and recommendations. This service will in no way obligate you.

TEXROPE V-BELT DRIVES PROVIDE FAST, ACCURATE SPEED CHANGING

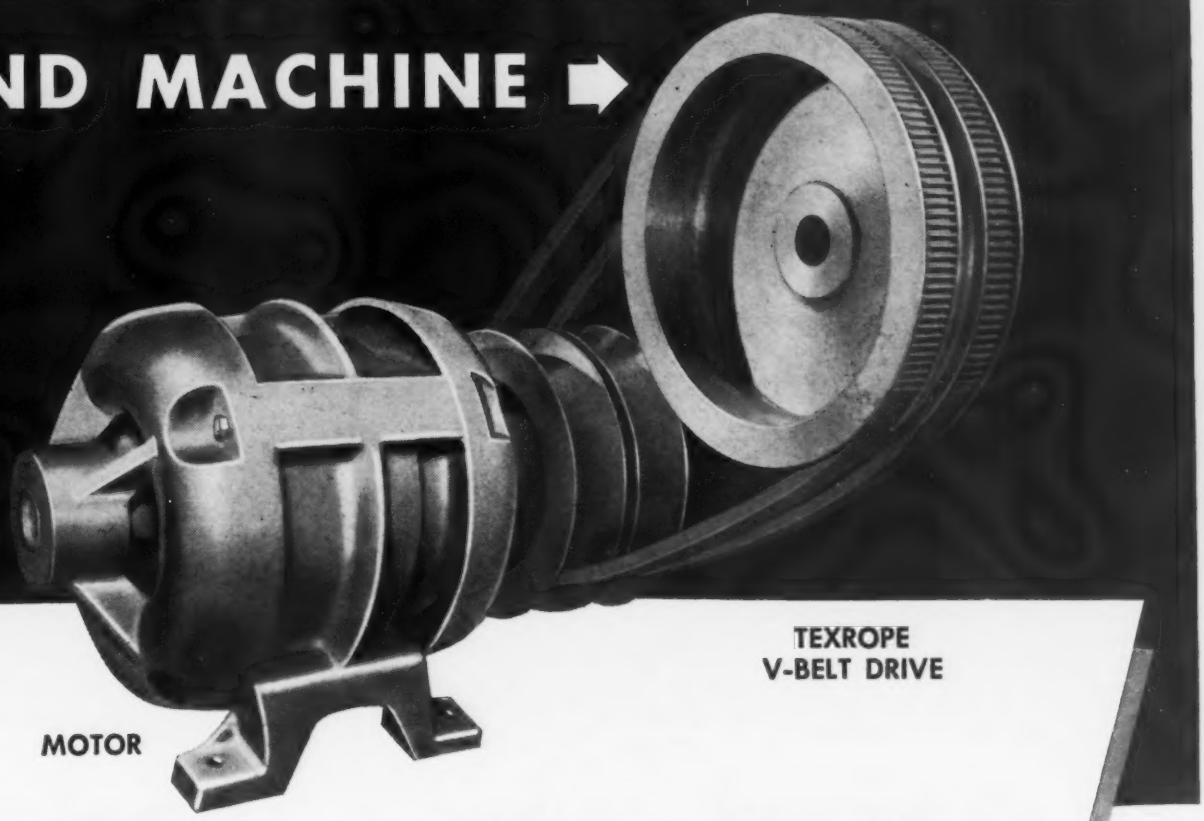
With *Texrope Vari-Pitch* sheaves you can regulate speed to the finest degree — and make the change in a matter of seconds with motion control equipment . . . in 5 to 8 minutes with stationary control sheaves. You gain in production efficiency — you save man and machine time. Allis-Chalmers originated the *Texrope* multiple V-Belt drive for the textile industry — offers the most complete range of equipment and the finest V-Belt engineering talent available.

USE ALLIS-CHALMERS MOTORS DESIGNED FOR TEXTILE SERVICE

Allis-Chalmers builds a wide line of motors for textile mills — motors designed to operate for long periods with a minimum of maintenance and service. New, improved Allis-Chalmers Quick-Clean motors, loom motors, and standard squirrel-cage motors are now in production. When you need motors, contact your nearest Allis-Chalmers office or dealer.

Mill Output Here...

AND MACHINE ➡



the Efficiency of Every Machine!

DELIVER UNIFORM POWER TO ALL MACHINES WITH MINIMUM LINE DROP

Use of Allis-Chalmers Dry-Type Distribution transformers at load centers throughout the mill will assure uniform power to all machines — operate all motors at full rated power and speed. They're quickly and easily installed. To complete the "power line to machine" link, Allis-Chalmers motor control provides positive, safe starting and stopping of each individual motor.

A 2391

Texrope and Vari-Pitch are Allis-Chalmers Trademarks

Call For Complete Service — Power Line to Machine

Your nearby Allis-Chalmers District Office or Authorized Dealer is ready to serve you. Whatever your equipment problem may be, it will get prompt attention. Don't hesitate to call on them or write ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN.

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

Introducing . . .
for technical uses

FATS and FATTY ACIDS

of great purity and stability

by SWIFT

Swift & Company is now inviting inquiries on its new lines of fatty acids and fractionated glycerides.

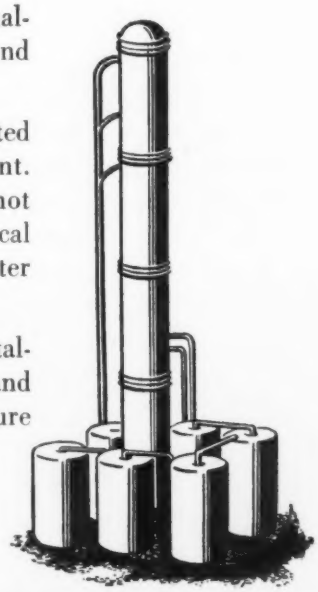
Extensive use of solvent processes will make possible new high standards of purity and stability.

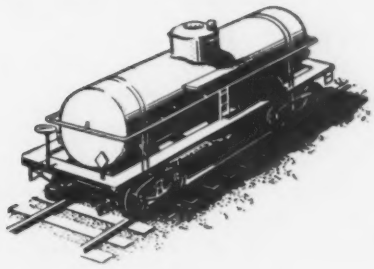
1 THE PROCESSES

Solvent processes yield fat fractions of a higher quality and wider usefulness. Most of Swift's new fats and fatty acids will be processed with solvents.

Unsaturated acids and drying oils will be separated by the Solexol process, using propane as a solvent. Fractions are separated selectively at temperatures not exceeding 200 degrees F. Since thermal and chemical side reactions are thereby avoided, products of greater purity and stability are obtained.

Saturated acids will be fractionated by solvent crystallization. Here, too, processing temperatures are low and harsh catalysts are absent, so that the natural structure of the substances is not disturbed.





2 THE PRODUCTS

Production plans are being laid for the following items:

Swift's Mixed Fatty Acids
Swift's Cottonseed Fatty Acids
Swift's Animal Fatty Acids
Swift's Linseed Fatty Acids
Swift's Corn Oil Fatty Acids
Swift's Soybean Oil Fatty Acids
Swift's Palm Oil Fatty Acids
Swift's Hydrogenated Marine Oil Fatty Acids

Swift's Fractionated Fatty Acids
Swift's Stearic Acid
Swift's Oleic Acid

Swift's Drying Oils
Swift's Fractionated Sardine Oil
Swift's Fractionated Menhaden Oil
Swift's Fractionated Soybean Oil
Swift's Fractionated Linseed Oil

Other Swift Glycerides
(*now in production*)
Swift's Lard Oils
Swift's Tallow Oil
Swift's Marine Oils
Swift's Neatsfoot Oil
Swift's Sperm Oil

Specialties
(*now in production*)
Swift's Sulfonated Sperm Oil
Swift's Sulfonated Tallow Oil
Swift's Sulfonated Castor Oil (Turkey Red Oil)
Swift's Sulfonated Neatsfoot Oil
Swift's Spermaceti
Swift's Textile Oils
Swift's Anti-foam Agents

3 SWIFT'S TECHNICAL PRODUCTS SERVICE

It brings you:

Representatives who know your problems and requirements.

Product technicians available for consultation on any Swift technical product.

Exploratory research developing products to further increase the efficiency of your operation.

This team is at your service now. Make use of it today!

Address inquiries to: **SWIFT & COMPANY** INDUSTRIAL OIL DEPARTMENT
Union Stock Yards, Chicago 9, Ill.

H & B ANNOUNCES

A PILOT M

1. OPENING AND PICKING

2. CARDING AND DRAWING

● The old exhibition room at H & B has been completely renovated and enlarged to the dimensions partially shown in these photographs. Added floor space, modern machinery and adequate facilities make possible extensive experimental and development work.

H & B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

NEW EXHIBITION ROOMS

MILL

● This pilot mill takes cotton from bale to twisted yarn on modern H & B textile machinery. Customers and interested textile men are cordially invited to visit these new exhibition rooms at H & B.

• • •

MACHINE CO.

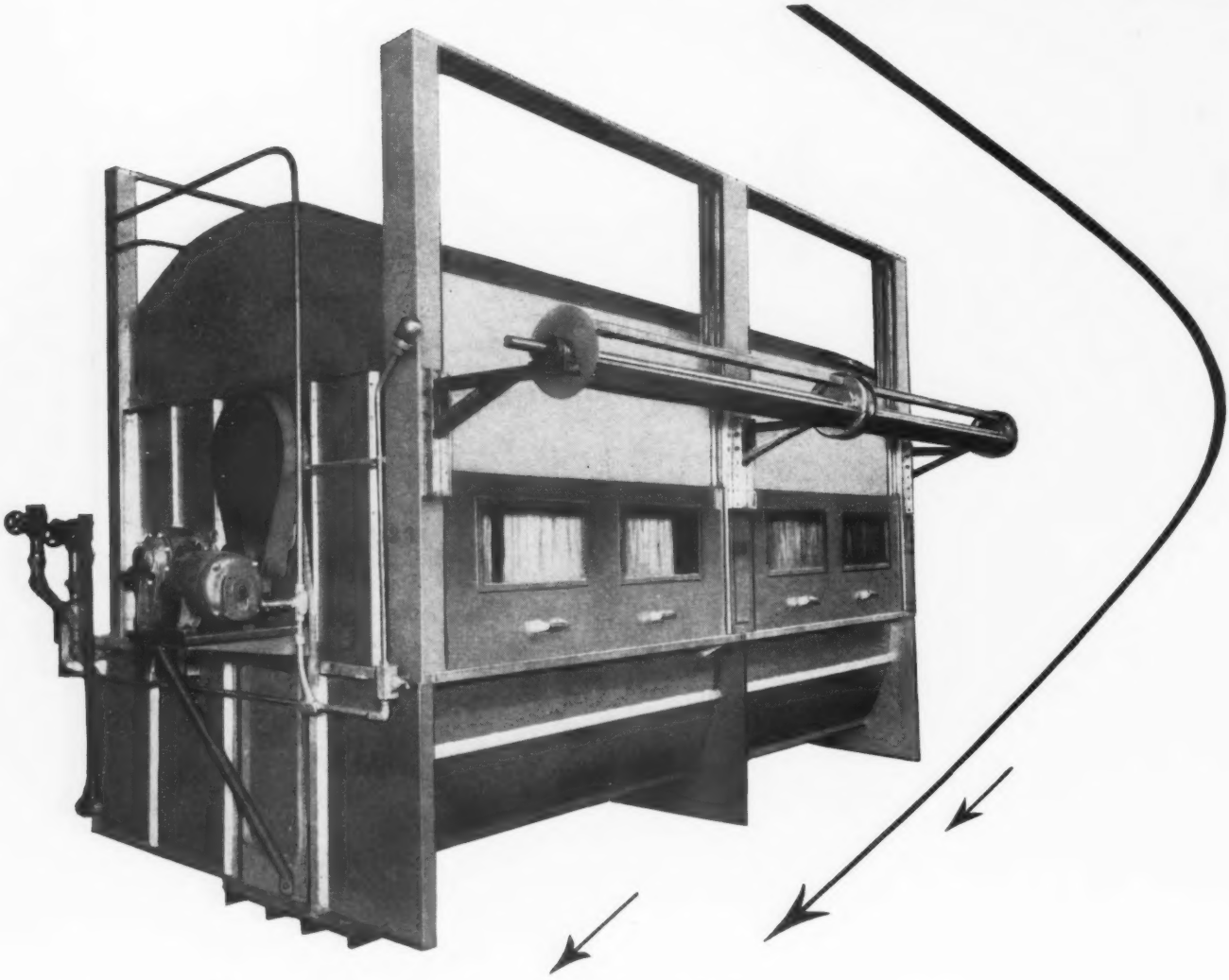
Textile Machinery

DIVISION PAWTUCKET, RHODE ISLAND, U. S. A.

BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

THERE IS A

werner dye box



to suit *any type* fabric!

Werner's Dye Box is an all stainless steel box, the shape of the bottom either curved or angular and the depth and length varied when constructed as required for any type of fabric from heavy plush and velours through woolens, double woven fabrics and the lighter synthetics and silks. The machine is made of the proper gauge metal to give the required strength for the particular size of the machine.

Features of Werner's Dye Box include sturdy construction with separate cast iron base and frames eliminating misalignment of the reel and drive supports, sprocket and chain drive permitting adjustable reel speed, electric knock off limit switch operated by rake beam; also, fluorescent interior lights and stainless steel slide doors, with totally enclosed balancers and high temperature, shatter proof glass panes for adequate view of the interior of the box.

Write us today for full information on this Dye Box or any of Werner's Equipment.

WERNER MACHINE COMPANY, INC.

PHONE, PASSAIC 3-3110

PASSAIC, NEW JERSEY

WERNER EQUIPMENT

- Beamer
- Decater
- Dry Cans
- Examining Machine
- Flock-Printing-Range
- Jig
- Open Width Boil-Off
- Padder (2 and 3 roll)
- Palmer Tenter Quetch Range
- Pile Fabric Finishing Range
- Quetch
- Rubbing Machine
- Rope Washers
- Stainless Steel Dye Kettle
- Single-Color-Roller Print Machine
- Tuber
- Tenter Frame
- Vacuum Extractor

Found - a new personality!

There it was . . . unpromised, unexpected . . . awaiting her in an Employers Mutual Policy

A divergent eye had long marred her otherwise attractive appearance . . . warped her personality.

She went to work for a company in which every employee was protected by an Employers Mutual Group Insurance policy. Her misfortune was noticed; she was given the proper care, including minor surgery. The trouble was corrected, her appearance transformed, her family made happy. Best of all, she was given a new outlook on life, literally and figuratively. Truly she found a new personality in an Employers Mutual policy.

Such humanitarian services, which Employers Mutuals perform for the benefit of policyholders and those protected, climax the complete and wholehearted fulfillment of all contractual obligations. These services embrace the prevention of accidents, reduction of health hazards and prompt, fair settlement of claims that have made Employers Mutuals known everywhere as good companies to do business with.

Whether you need efficient, good will-building compensation insurance, protection against liability claims, a fidelity bond, or insurance for your plate glass window . . . you will find Employers Mutuals services the open door to a new, fresh conception of insurance cooperation.

Employers Mutuals write: Workmen's Compensation—Public Liability—Automobile—Group Health and Accident—Burglary—Plate Glass—Fidelity Bonds—and other casualty insurance. Fire—Extended Coverage—Inland Marine—and allied lines. All policies are non-assessable.

Employers Mutual's new booklet, "Comprehensive Crime Protective Insurance," explains how you may insure against all types of loss in your business from theft, robbery, fraud or dishonesty—all with a single policy tailored to your exact requirements. A copy of a "Dictionary of Insurance Terms" will help you to understand the provisions of all your casualty and fire policies. Send for either, or both, on your letterhead—or call your local Employers Mutuals representative.

Employers Mutuals Policies Protect Lives, Health and Property

EMPLOYERS MUTUALS OF WAUSAU . . . make insurance understandable

EMPLOYERS MUTUALS OF WAUSAU

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
EMPLOYERS MUTUAL FIRE INSURANCE COMPANY
HOME OFFICE: WAUSAU, WISCONSIN
Offices in Principal Cities—Consult Your Telephone Directory

FOR YOUR INFORMATION

MERLONS offer textile industry new, wider range of finer finishes

The new Merlons, a comprehensive line of clear, odorless and colorless solvent-free resin dispersions, offer a complete range of durable finishes for all fibers and fabrics. They can impart improved luster, crispness and fullness, better wear and abrasion resistance.

Following are a few specific uses for the different Merlons:

1. Abrasion Resistant Finish for work clothes and industrial fabrics	**Merlon BR**
2. Rug Backing	**Merlon SP**
3. Durable finish for sheeting	**Merlon BR**
4. Crisp, firm, curtain finish	**Merlon KR**
5. Stiffening for interlinings	**Merlon KR**
6. Pigment binder	**Merlon KR, BR**
7. Coatings	**Merlon S, SP or BR**
8. Adhesives	**Merlon KR or BR**

A further guide to textile technologists who are looking for new ways to improve their products is this short description of the Merlon family. (Various blends and combinations can be worked out to many intermediate degrees of stiffness or durability.)

Product	Resin	% Solids	Plasticized	Approximate Particle Size in Microns	pH
Merlon S	Polystyrene	40	No	1.0	8-9
Merlon SP	Polystyrene	40	Yes	1.0	8-9
Merlon BR	Polyvinyl Butyral	50	Yes	0.5-1.0	10
Merlon BRS	Polyvinyl Butyral	50	Yes	0.5-1.0	10
Merlon KR-1	Polyvinyl Acetate	55	No	1.5-2.0	4-6
Merlon KR-2	Polyvinyl Acetate	55	No	1.0	4-6
Merlon KR-3	Polyvinyl Acetate	35	No	0.2	3.5-5.5
Merlon KR-4	Polyvinyl Acetate	55	No	2.0-3.0	4-6
Merlon KR-5	Polyvinyl Acetate	55	No	1.5-2.0	3.5-5.5

All Merlons are applied from a dilute aqueous bath. Normally low concentrations are used to deposit from one to five percent resin on the fabric. No special equipment is necessary for application, since the Merlons require no curing or after-treatment.

Complete data on each of these Merlons is available. But please tell us your particular problem or particular fabric so that we can send you the data we feel will be most helpful. **Include this information with the coupon on the opposite page and mark it D-1.**

Stymer, Milmer, Syton, Merlon: Reg. U. S. Pat. Off.

Treated shoe linings control athlete's foot

A new development of Monsanto research is the adaptation of Milmer, the company's 8-quinolinolate to shoe linings as an effective fungicide for athlete's foot.

Many cases of athlete's foot are prolonged because the foot is repeatedly re-infected by the fungi taking up residence within the shoe.

In recent tests, men afflicted with athlete's foot wore shoes with Milmer-treated liner fabric. Shortly after they started wearing the shoes, the infection cleared. Several of the men said that they would willingly pay $5 extra per pair for these shoes.

Milmer, Monsanto's mildew inhibitor, is an outstanding preservative for fabrics. It is effective against soil and air-borne fungi. It is fast to weather and washing. It is non-toxic and odorless.

Fabrics utilizing Milmer include those for awnings, outdoor furniture, sporting goods and tents.

(Check D-2 on the coupon for additional Milmer data.)

SYTON for worsted spinning

Typical of the reports from mills using Syton for their spinning of worsted yarns are these:

1. A 16% production increase in spinning 60's yarn with 1¼ to 1½% Syton product on the weight of wool. Less fly waste in roving and reduction in ends down in both roving and spinning.

2. On 56's wool, yarns showed a 15% reduction in number of ends down and a strength increase of approximately 12%.

3. On 24's singles yarn, twist was reduced 20% and the strength of the yarn was still greater than the untreated at standard twist.

(Check D-3 on the coupon for additional Syton data.)

STYMER for acetate sizing easier to handle

Mills using Stymer for better sizing of acetate have discovered additional important benefits in handling:

1. Stymer, unlike the natural gels and starches, is a carefully-controlled synthetic product. It is stable indefinitely, does not deteriorate in use or in storage.

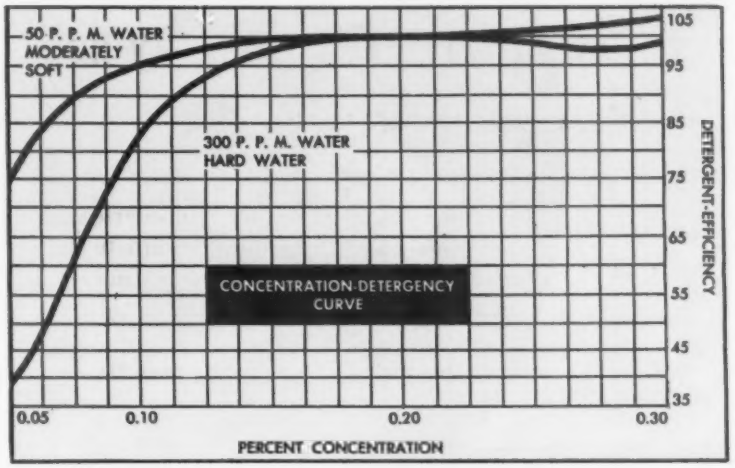
2. Stymer forms a true solution, does not set up in pipes, boxes or tanks. It does not make necessary wasteful, time-consuming removal at the end of each working period as do the sizes which gel.

Of special importance to the slasher operators is the new sodium salt of Stymer which is far more convenient to handle. It eliminates the pH control problem and also the use of sodium hydroxide in the plant.

These convenience and economic factors, added to the following advantages, have led to the adoption of Stymer as standard for acetate sizing in many progressive mills:

- New toughness at high humidity.
- New flexibility at low temperature.
- Elimination or minimizing of static in slashing and weaving.
- Elimination of sticking to dry cans.
- Minimized shedding.
- Broken filaments in warp picked up.
- Application in size baths of temperatures from 130° to 160° F.
- Ease of removal.

For more Stymer information mark item D-4 on the coupon on this page.



STED proved a true detergent for all textile cleansing operations

The effectiveness of STED, the new all-purpose detergent, has been proved under actual working conditions in scores of mills in all types of textile washing and scouring operations.

Sted is *not* just another wetting agent with some detergent effects; it is a powerful and active detergent whose scouring and cleansing action is demonstrated in the above chart.

Sted is non-sudsing and non-foaming and distributes the soil quickly into the bath without surface scum. It is non-substantive, therefore extremely low concentrations are effective. It is not decomposed by acid or alkali and does not deteriorate by oxidation or at high temperatures.

Lower prices recently announced for Sted make it especially welcome in all cost-conscious mills.

STED effective in hard water

One of Sted's outstanding properties is its ability to clean efficiently in hard water without the addition of water softeners. At the recommended 0.2% concentration, Sted is as efficient in hard as it is in soft water (see chart above).

The inability of soap to scour in hard water is due to the formation of insoluble sticky lime and magnesium curds which often re-deposit on the material being cleaned. Sted forms no such deposit, therefore is quickly rinsed from the fiber or fabric.

For more details on Sted, mark D-5 on the coupon below.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, TEXTILE CHEMICALS DEPT.
Desk #TWT-4, 140 Federal Street, Boston 10, Mass.

Please send me information on the following subjects as covered in your advertisement:

D-1 ..... D-2 ..... D-3 ..... D-4 ..... D-5 .....

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

THIS DRIVE COMBINATION...

gives you faster "start-up" plus long service

Here's the drive that has maximum accelerating power and the stamina for long, trouble-free service.

A first grade flat leather belt has a full grain, pore-like surface that provides a positive pulley grip. This, together with the belt's natural strength and shock-absorbing ability go into action when the motor, on the pivoted base, "leans" into the job. You get a sure, smooth, fast start that means fewer 'ends down'.

Modern, high quality leather belting has a resiliency and wear-resistance that enables it to transmit power efficiently for many years of severe, continuous service. AL-13

American **LEATHER BELTING** *Association*

Headquarters for Authentic Power Transmission Data

41 PARK ROW, NEW YORK 7, NEW YORK

SARAN

BY NATIONAL

"Upholstered in Saran" means beauty for an active life! There's a world of real sales appeal in fabrics woven of Saran, the *basically different* textile material that adds new standards of wearability to distinctive beauty that sells on sight. In an exciting range of decorator colors, monofilaments of Saran are available as fine as .005". These flexible filaments, requiring no preparation for warping or quilling, are a pleasure to work and to weave! Saran's rich color and beauty, inherent in the fiber itself, and its outstanding durability are prompting a host of new fabric themes and applications. Here, indeed, is the newest in textile materials for modern fabric interpretations. Trust fabrics of Saran to meet every requirement of today's active living!

REG. U.S. PAT. OFF.

THE
National plastic products company
ODENTON • MARYLAND

New York: Empire State Building; Los Angeles: Bankers Building

SARAN

SARAN BY NATIONAL *denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's Saran, and supplied to mills, weavers and other fabricators.*

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

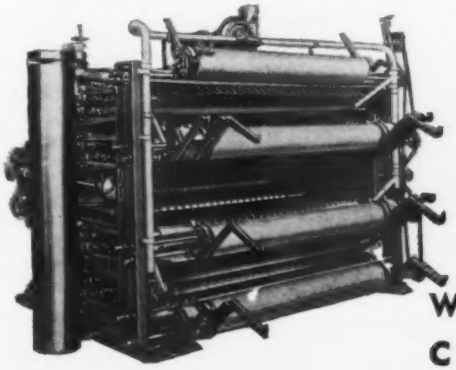
ESTABLISHED 1840

EXPERIENCE *does* MAKE A DIFFERENCE

The "jack-hammer" man may have had years of experience on a pneumatic drill, but you wouldn't let him come within a mile of your molars. You *know* that it takes years of specialized study to train the hands in which you place your confidence . . . costly and precise equipment. So, too, in the textile field, it's just as impractical to expect a manufacturer, whose experience has been in fields foreign to the industry, to manufacture complicated textile machinery.

Today's textile machines are the results of thousands of hours of research, constant attention to the intricacies of precision production, everlasting alertness to the necessity for efficient service.

For well over a century, Whitin has produced high-performance textile machinery — manufacturing a continuing supply of genuine Whitin replacement parts to guarantee to each and every purchaser of Whitin equipment that the machines which perform so well today, will continue to produce competitively year after year until improvements, perfected by our constant research, render it obsolete. When buying textile equipment, buy the Best! . . . *Buy Whitin*



Whitin

MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.

take any card -Red or Black!

Take any card in your mill: Is it showing red or black figures on your books? That depends on how much and how efficiently it runs. Shutdowns or poor quality work postpone or prevent profits.

To keep your cards running continuously and efficiently use Ashworth Card Surveys. Many of the biggest mills in the country have been using them for years. They are made free of charge by practical card men, at regular intervals if you so desire, and include inspection of bearings and chains as well as all card clothing. Written reports enable you to decide what repairs and replacements are necessary and to schedule them so as to involve a minimum loss of production time and to spread out the cost.

Ashworth has a COMPLETE line of card clothing products to supply your needs. And with 3 factories, 6 repair shops, and 7 distribution points we can give efficient service.

Write us at Fall River and arrange for a survey of your cards.

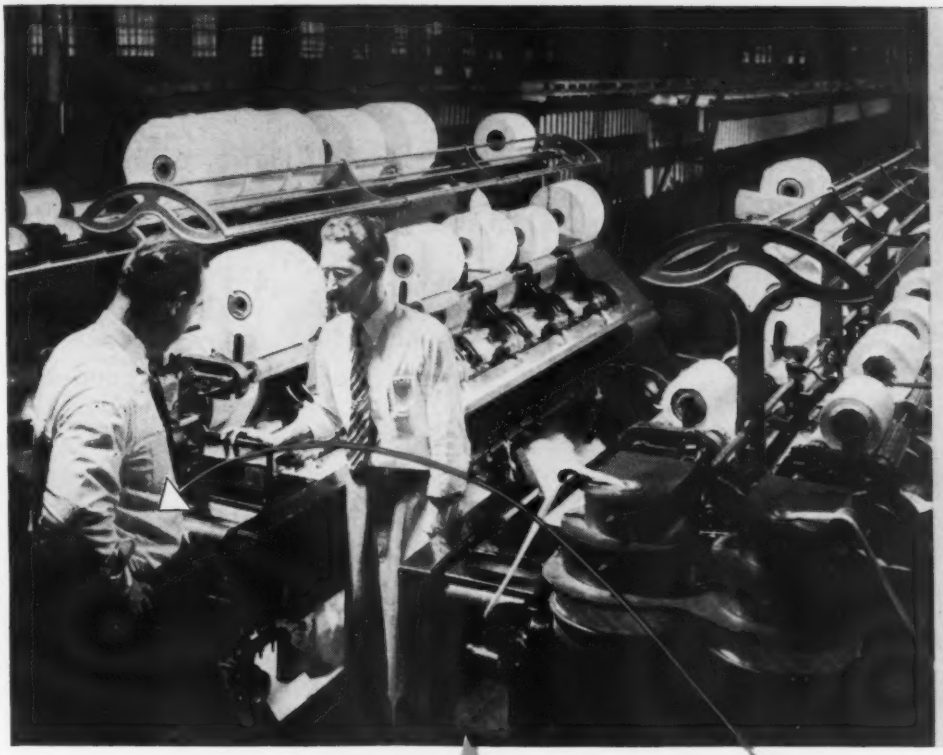
PRODUCTS AND SERVICES

Card Clothing For Cotton, Wool, Worsted, Silk, Rayon And Asbestos Cards And For All Typès Of Napping Machinery · Brusher Clothing And Card Clothing For Special Purposes · Lickerin Wire And Garnet Wire · Sole Distributors For Platt's Metallic Wire Lickerins And Top Flats Reclothed

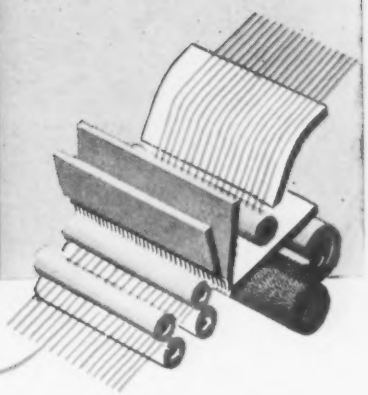
Ashworth PIONEERS IN CARD CLOTHING

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO. (Woolen Div.)
Fall River*‡; Worcester*‡; Philadelphia*†‡; Atlanta†‡
Greenville†‡; Charlotte†‡; Dallas†‡ (Textile Supply Co.)
*Factory †Repair Shop ‡Distributing Point

3 FACTORIES · · · 6 REPAIR SHOPS · · · 7 DISTRIBUTING POINTS



The Gulf Lubrication Engineer "in the picture" (left) helped set up a systematic lubrication schedule for these modern combers. Each of these units has over 100 lubrication points.



New COMBERS get the right start for a long life...

when the Gulf Lubrication Engineer is "in the picture"

IF you're installing new combers—or any other new equipment—you'll want to insure your large investment as thoroughly as possible against premature mechanical failures, below-par performance, and high maintenance costs.

Here you'll find the services of a Gulf Lubrication Engineer very helpful. He will make a complete survey of each unit of equipment and study your particular operating conditions to determine their influence on lubrication.

After analyzing each important factor, he will recommend for each piece of equipment the Gulf quality oils or greases which will provide maximum protection against wear. Then you can be sure you've made the right start—not only for a long life, but for a trouble-free life with low costs for maintenance.

For the co-operative counsel of a Gulf Lubrication Engineer, write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation • Gulf Refining Company

Division Sales Offices:

Boston • New York • Philadelphia • Pittsburgh • Atlanta
New Orleans • Houston • Louisville • Toledo

What makes it Sell ?

What puts the eye-appeal and sales-appeal in synthetic fabrics? Is it just the design? You know that's only half the story. Quite as important is the fabric finish—the softness, the pleasing hand, the draping qualities.

Back of every good finish there's good processing — the efficient type of processing you can count on with Olate.

Olate has a well established reputation for quick solubility, exceptional detergency, and good lubricating properties. Olate rinses from fabrics rapidly and thoroughly. Throughout the industry this pure, neutral, low titer soap is widely used because of its efficiency, economy, and gentleness.

Olate can help *your* plant turn out synthetic fabrics which have the eye-appeal so closely related to sales-appeal. Try it.

Procter & Gamble

Olate

safe and efficient for every textile soap usage!

PRODUCTION UP 15%... YARN QUALITY IMPROVED *WITH IONOTRONS!*

Another example of how textile static problems are being solved with the Ionotron Static Eliminator®.

Arrow shows location of Ionotron Static Eliminator on Peralta in the Clarksburg, Mass. mill of Strong Hewat & Co., where it has eliminated wool card static problems, and improved production of their high-quality suitings and coatings.

In the Strong Hewat & Co. Inc. mill, static was responsible for bad feeds, light feeds, spoilage, and stoppages on the wool card.

Then two Ionotrons were installed on the Peralta. Following the installation of the Ionotrons, Joseph P. Cusson reports that production is up at least 15%. The card runs steadier, spoilage is reduced 15 to 20%, and machine operating time has increased. In addition, the yarn is better quality because it is more uniform in weight. Additional Ionotron applications are planned.

Further textile applications — Successful applications of Ionotrons to textile machinery include use on wool cards, drawing frames, cloth folding arms, nylon boarding machines and many others.

For smoother production — The Ionotron aids production by eliminating bunching, lapping, and other problems caused by static charges in textile fibers. This reduces frequency of shutdowns. It results in more uniform windings, simplifies fabric-coating operations, and improves working conditions by permitting a substantial reduction in humidity.

Permanently effective, no operating cost — Heart of the Ionotron is a permanent source of alpha radiation that "bleeds off" static charges before they become a problem.

There is no contact between the Ionotron and fibers or fabric, no moving parts, no power connection and ***no operating cost.*** Atmospheric conditions have no effect on the efficiency of the Ionotron. Installation is simple, involving only brackets and bolts.

For more detailed information — For full details on application of Ionotrons to your worsted or wool machines, write to Davis & Furber Machine Co., North Andover, Mass.

For other textile applications of the Ionotron, send details of your static problem to Dept. M-9 U. S. Radium Corp., 535 Pearl Street, New York 7, N. Y.

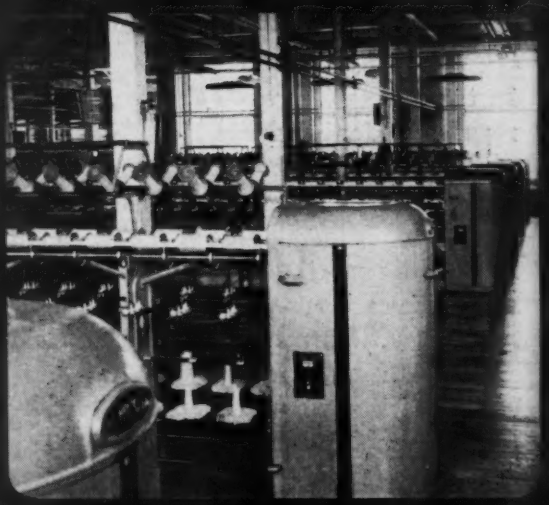
U S RADIUM

IONOTRON *Static* **ELIMINATOR**

Smooth

The American Thread Company of Willimantic, Conn., manufacturers of sewing threads made from du Pont Nylon, has selected Atwood twisting machinery for its throwing requirements.

(Photographs used with permission of The American Thread Company.)



Atwood Model 200 Redraws at The American Thread Company. Variable speed drive gives exact yarn speed desired — from 150 to 350 ypm. Single deck construction eliminates yarn spoilage likely to be experienced with double decks.

ATWOOD

UNIVERSAL

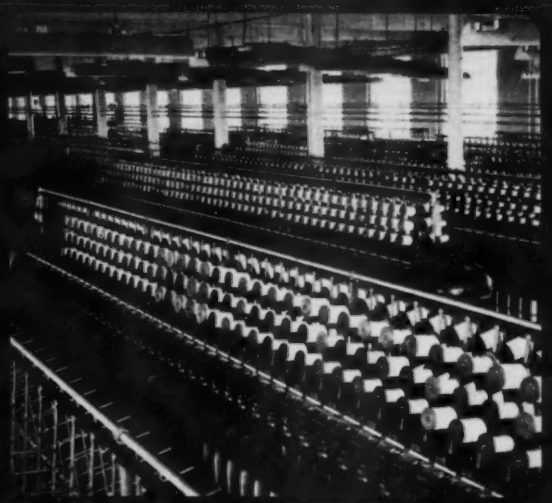
PROVIDENCE 1, RHODE ISLAND

Providence • Boston • Philadelphia • Utica • Charlotte •

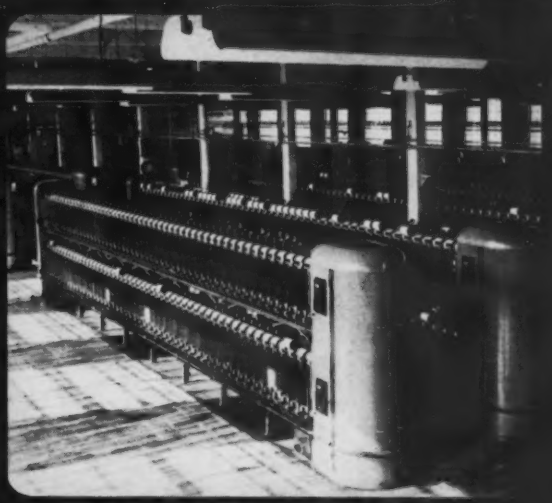
Agents in every principal

running of Atwood Twisters

...REFLECTED IN SMOOTH RUNNING OF AMERICAN THREADS



Atwood Model 10 ("5B") Ring Twisters at The American Thread Company. Automatic stop motion for each spindle permits tying knots in single ends. Single, endless, lapless belt gives constant spindle speed and accurate twist from spindle to spindle.



Atwood Model 110 Up-Twisters at The American Thread Company. Exclusive bobbin hangers accurately position takeup, give better control of thread lay. Single, lapless belt maintains uniform spindle speed without vibration.

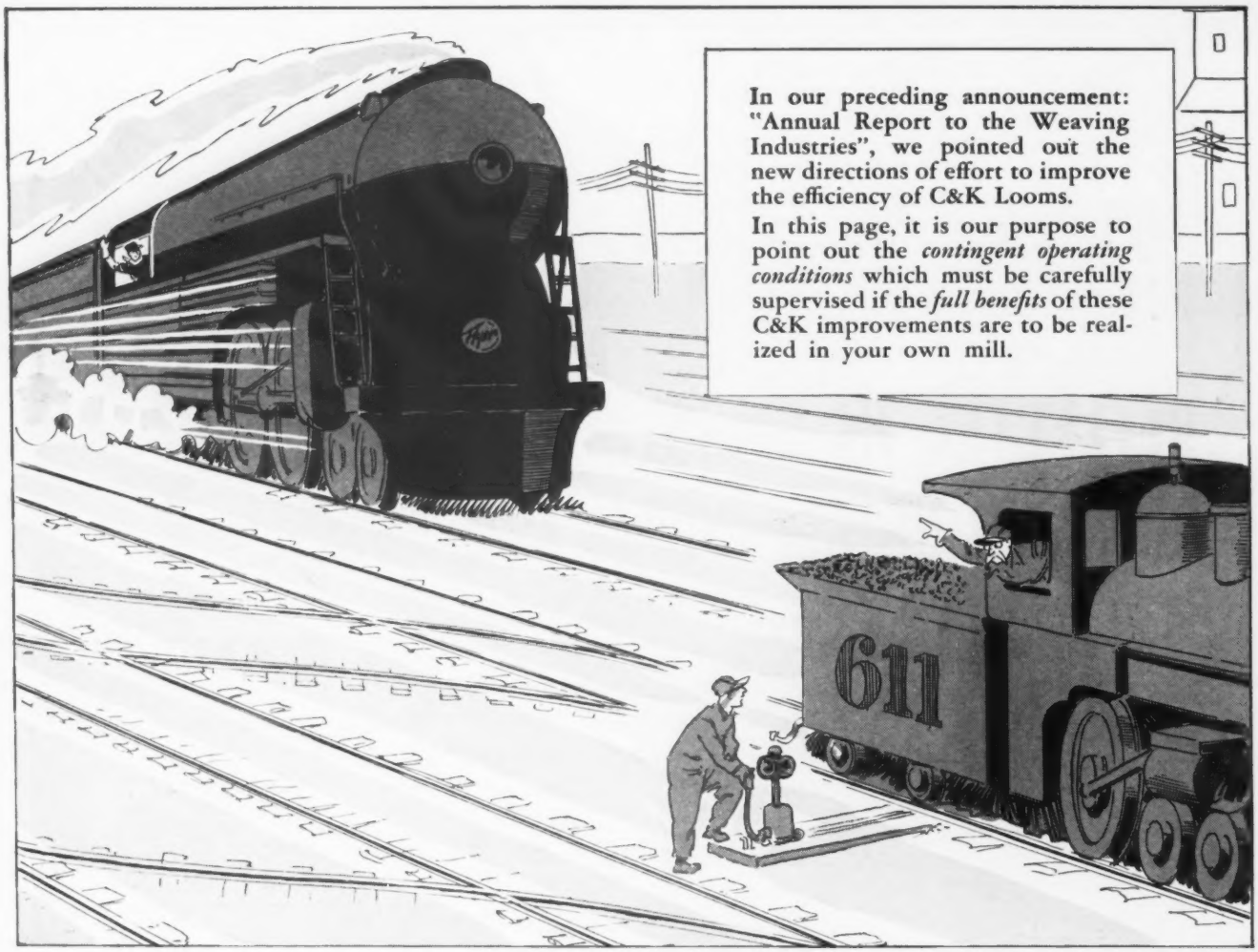
WINDING COMPANY

ATWOOD DIVISION

23-7-19

Atlanta • Chicago • Los Angeles • Montreal • Hamilton • Manchester, England • Paris, France • Basle, Switzerland

textile center in the world



In our preceding announcement: "Annual Report to the Weaving Industries", we pointed out the new directions of effort to improve the efficiency of C&K Looms.

In this page, it is our purpose to point out the *contingent operating conditions* which must be carefully supervised if the *full benefits* of these C&K improvements are to be realized in your own mill.

"Sure, I could handle that New Job *just as well as this one here!"*

This would make a railroader's blood run cold—to assume, because a man has operated an old machine, that he should be able to take a *new* machine of the same general type and run it straight off . . . *without any knowledge of the new features.*

When common sense is so derailed, a wreck usually follows fast. And yet this situation is not as unusual as it ought to be, in U. S. weaving mills. Weavers on old looms are sometimes thrown in, "cold," to work on modern, new C&Ks. Then what happens? Usually a frantic phone call to "come see what's wrong with these—— looms!" So a C&K engineer goes. He sees. And here's an actual example of what he finds to be "wrong with those —— looms":

1: FILLING YARN: No bunches on bobbins. Long tails left on at time of quilling. No conditioning. All this caused run-outs, breaks, kinky filling, jerk-backs, snarls.

2: WARPS: Bad. Slack selvages. Crossed ends.

3: LOOMFIXERS: Did not understand importance of accurate setting of the latest C&K Looms.

4: STARTING UP: No check-up on looms before entering.

5: WEAVE-ROOM CONDITIONS: No 24-hour control of temperature and humidity.

6: ATTITUDE OF PERSONNEL: Workers antagonistic through lack of understanding of what new C&K Looms could do to increase their pay and make their work easier and more enjoyable.

CORRECTIVE MEASURES: All the above *6 faults in contingent conditions* corrected. A Production Committee formed to explain fully to the workers the advantages of the new C&K Looms. Instruction manuals issued. And now an active, personal interest on the part of top mill management makes continued success a certainty.

So why take a chance on running off the track, right at the start? Begin *now* to educate your workers and production personnel on how to get the top return from your mill's investment in new C&K Looms. Then you'll have a *clear track* to higher output, finer fabrics, lower costs.

Crompton & Knowles Loom Works

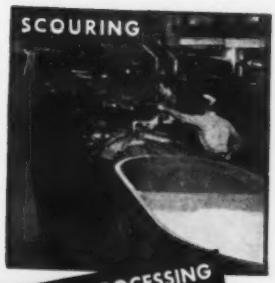
WORCESTER 1, MASSACHUSETTS, U. S. A.

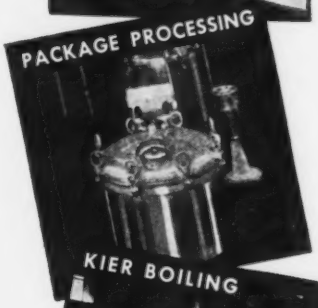
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R.I.

Jack of all Trades

—and Master, too!





TRITON 770

Mill men know TRITON 770 CONCENTRATE as a dependable detergent, wetting and emulsifying agent. But did you ever realize how *many* different jobs TRITON 770 CONCENTRATE does in the textile mill? Glance over the applications shown on this page . . . they show *some* of the processes in which this dependable chemical helps in making textile mill operations more efficient and more economical. Write for full information on how you can use this fine chemical to advantage.

THE SERVICE THAT BUILT OUR BUSINESS CAN HELP YOURS

Our business has been built largely on the practical help we have been able to give our customers, right in their own plants, in adapting Rohm & Haas products to their needs.

Our representatives are men with technical training and practical experience in the use of industrial chemicals. Call in a member of our textile chemicals department when you need assistance in choosing or using . . .

Chemicals for Fine Textiles

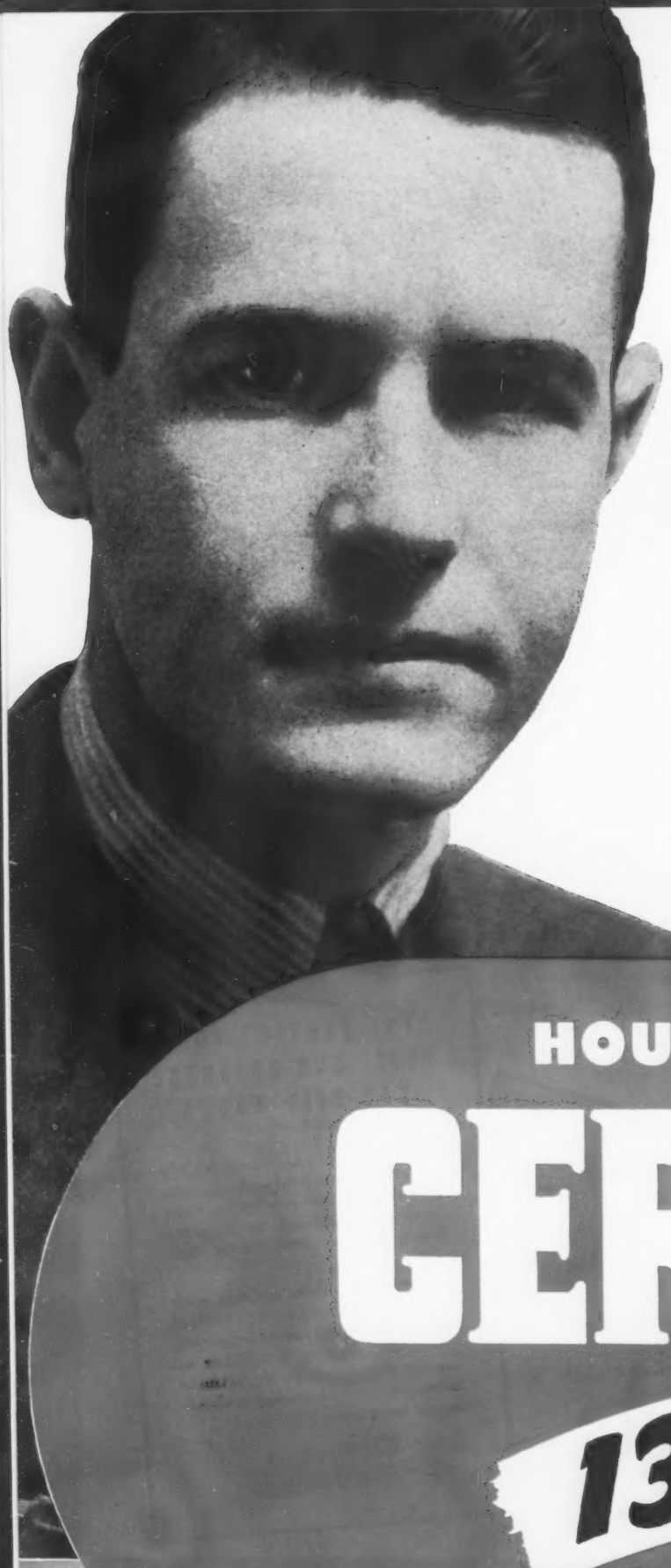
TRITON *is a trade-mark, Reg. U. S. Pat. Off.*

Represented in Canada by Rohm & Haas Company of Canada, Ltd., Toronto; and in South America by Cia. Rohm y Haas, S. R. L., Carlos Pellegrini 331, Buenos Aires, Argentina, and agents in principal South American cities.

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Manufacturers of Chemicals including Plastics • Synthetic Insecticides • Fungicides • Enzymes • Detergents
Germicides • Chemicals for the Leather, Textile, Ceramic, Rubber, Paper, Petroleum and other Industries



Here's why you'll want to try

HOUGHTON'S

CERFAK 1300

THE NEW "ACROSS-THE-BOARD" DETERGENT

ONE **CERFAK 1300 is both an excellent detergent and speedy wetting agent. It cleans clean, it cleans fast!**

THAT'S EFFICIENCY!

TWO **CERFAK 1300 has a wider range of application, does more jobs – better – than any other surface active agent tested.**

THAT'S VERSATILITY!

THREE **CERFAK 1300 is so highly concentrated that .04% to .05% solutions take care of practically all needs.**

THAT'S ECONOMY!

Cerfak 1300 is a non-ionic type of detergent and wetting agent, supplied in liquid form. It contains no animal or vegetable fats. Its non-ionic quality makes it applicable over a wide range of usage.

The Houghton Man has an interesting story to tell you of this latest member of the CERFAK family and the results it has given over almost a year of quiet plant testing. To get that story, either in print or in person, we suggest you use the coupon below, or write us more fully about your own detergency problem.

E. F. HOUGHTON & CO.
303 W. Lehigh Ave., Philadelphia 33, Pa.

Please ☐ have the Houghton Man tell me more about Cerfak 1300
☐ send me the new descriptive folder.

Name_____ Title_____

Company_____

Address_____

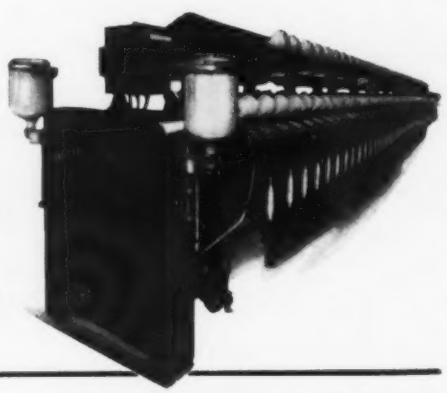
WOOL AND WORSTED WINDING

It's a NATURAL for the FOSTER MODEL 102

The Foster Model 102 is the most suitable machine on the market for the winding of wool and worsted yarns. Here's why:

1. A 7" traverse package, if desired.
2. High winding speeds (up to 700 y.p.m.).
3. Brackets can be supplied for holding any type cop or bobbin in correct position for maximum winding efficiency.
4. Standard traverse mechanism will handle even hard twist worsted yarns with maximum resistance to cutting action.
5. Winds soft twist or hard twist yarns, any count or type, on warping cones, knitting cones, parallel tubes, dye packages or twister packages — any taper, and 9 angles of wind from 9° to 18°.
6. Several types of self threading tension and slub catching attachments promote quick threading and automatic inspection.
7. Repair costs run as low as $3.50 per year per 100 spindle machine.
8. Empty bobbin conveyor **BELOW BOBBIN** pins eliminates lifting because conveyor discharges into standard size truck.
9. One side of the machine can wind tubes, the other cones, if desired.

Send for Bulletin A-95 for complete data.



FOSTER MACHINE CO.

WESTFIELD, MASSACHUSETTS

Southern Office: Johnston Bldg., Charlotte, N. C.; Canadian Representative: Ross, Whitehead & Co., Ltd., University Tower Bldg., 660 Ste. Catherine St., West, Montreal, Quebec; European Representative: Muschamp Taylor Ltd., Manchester, England

18 Years of Leadership!

America's foremost COLOR SERVICE

and America's Leading Maintenance Finish make painting...

Pay extra dividends!

Glidden
Sight Perfection
IMPROVES VISIBILITY
INCREASES PRODUCTION
PROMOTES SAFETY
BUILDS MORALE

SPRAY-DAY-LITE
AND BRUSH-DAY-LITE
MAXIMUM LIGHT REFLECTION
1 COAT DOES JOB OF 2
WASHES LIKE TILE
LASTS LONGER

For 18 years companies everywhere have been discovering how the combination of Glidden Color Service and Glidden SPRAY-DAY-LITE makes painting a *profitable investment,* instead of an expense. The scientific use of white and colors—so easy with free prescriptions tailor-made for your plant by Glidden experts—will stimulate production by improving visibility, safety and morale. And in just one coat Glidden SPRAY-DAY-LITE will give you the finest, longest-wearing finish ever! Send coupon below today for more facts on America's foremost Color Service and America's leading interior maintenance paint!

QUALITY Glidden PRODUCTS

Glidden

Pacemaker in Paints

THE GLIDDEN COMPANY, Dept. VV-4
11001 Madison Ave., Cleveland 2, Ohio

☐ Please send literature to indicate the practical and thorough nature of the *Sight Perfection* painting program you will design especially for us.

☐ You may have your representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.

NAME .....

COMPANY .....TITLE.....

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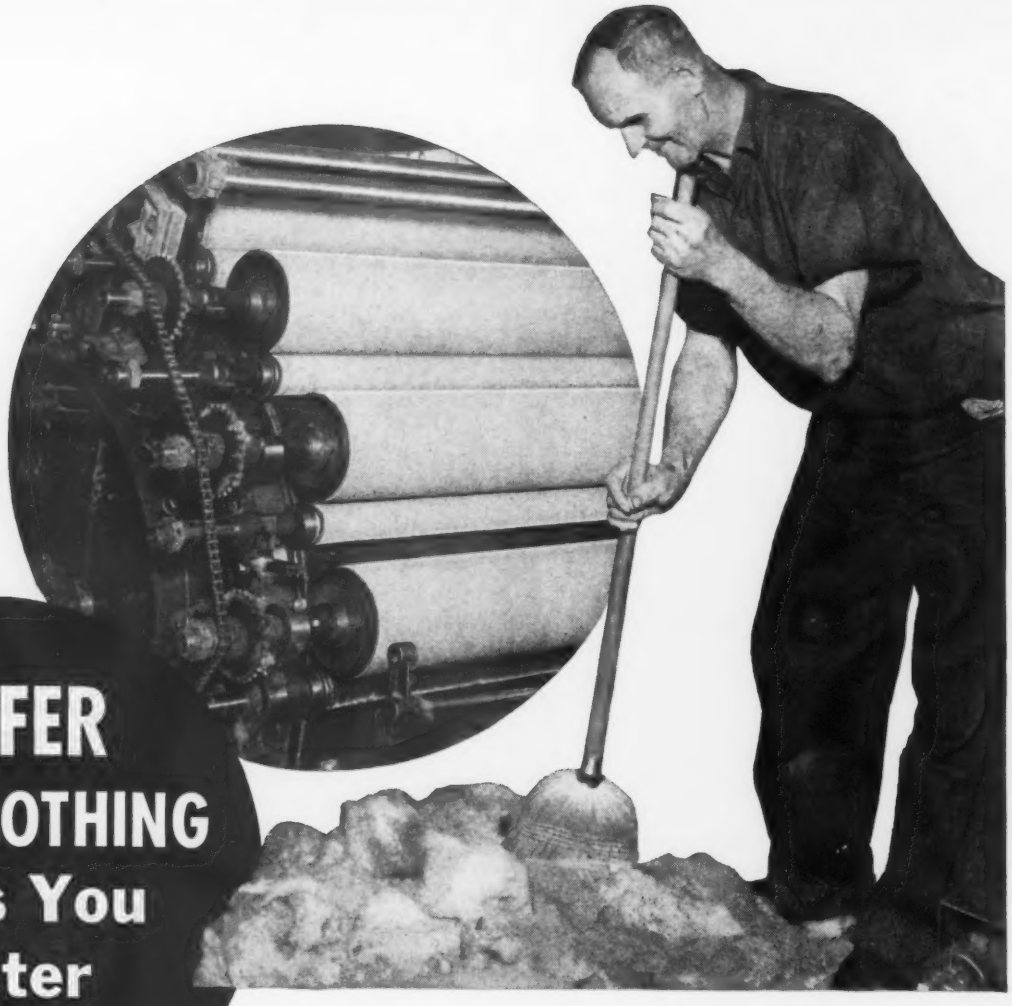


TUFFER CARD CLOTHING Gives You Better Quality

and Reduces Raw Stock Losses

THE accurately-formed wires of Tuffer Card Clothing—uniformly placed in the famous Tuffer Foundation—give proper carding action . . . carding action that assures high production of top quality material and eliminates serious losses in raw stock. Tuffer Card Clothing gives you better results and reduces manufacturing costs in every department. Talk over your carding problems with a Howard Bros. representative. He will work with you in increasing the yield of your cards . . . and make practical recommendations that will mean better yarns at lower production costs.

HOWARD BROS. MFG. CO.
WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C. **Branches:** Philadelphia, Pa. and Blanco, Texas
Direct Representation in Canada

A-8

TUFFER CARD CLOTHING **IMPROVES PRODUCTION ALL ALONG THE LINE**

Easily Installed

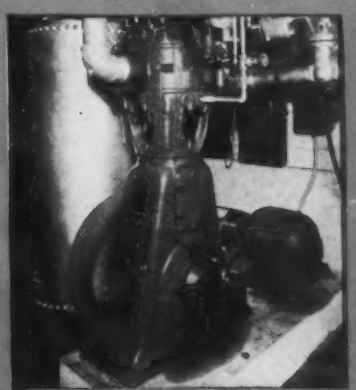
WG-9 REQUIRES ONLY A SMALL FOUNDATION TO GIVE TROUBLE-FREE, HEAVY DUTY SERVICE

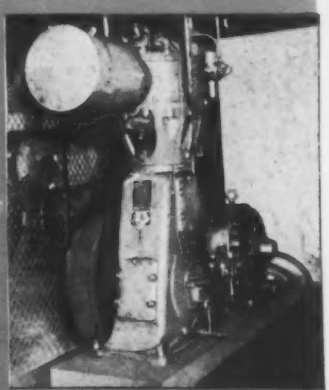
Vertical, single stage, double acting unit made in 11 cylinder sizes. Features simple block type foundation, full force-feed lubrication, anti-friction main bearings and long life "Dual Cushion" valves.

CYLINDER LINERS REPLACEABLE ON THE JOB

20 to 150 P.S.I.

153 to 822 C.F.M.





Two examples of compact installations are shown above. Note the simple block type foundations of small area for these Joy WG-9 models.

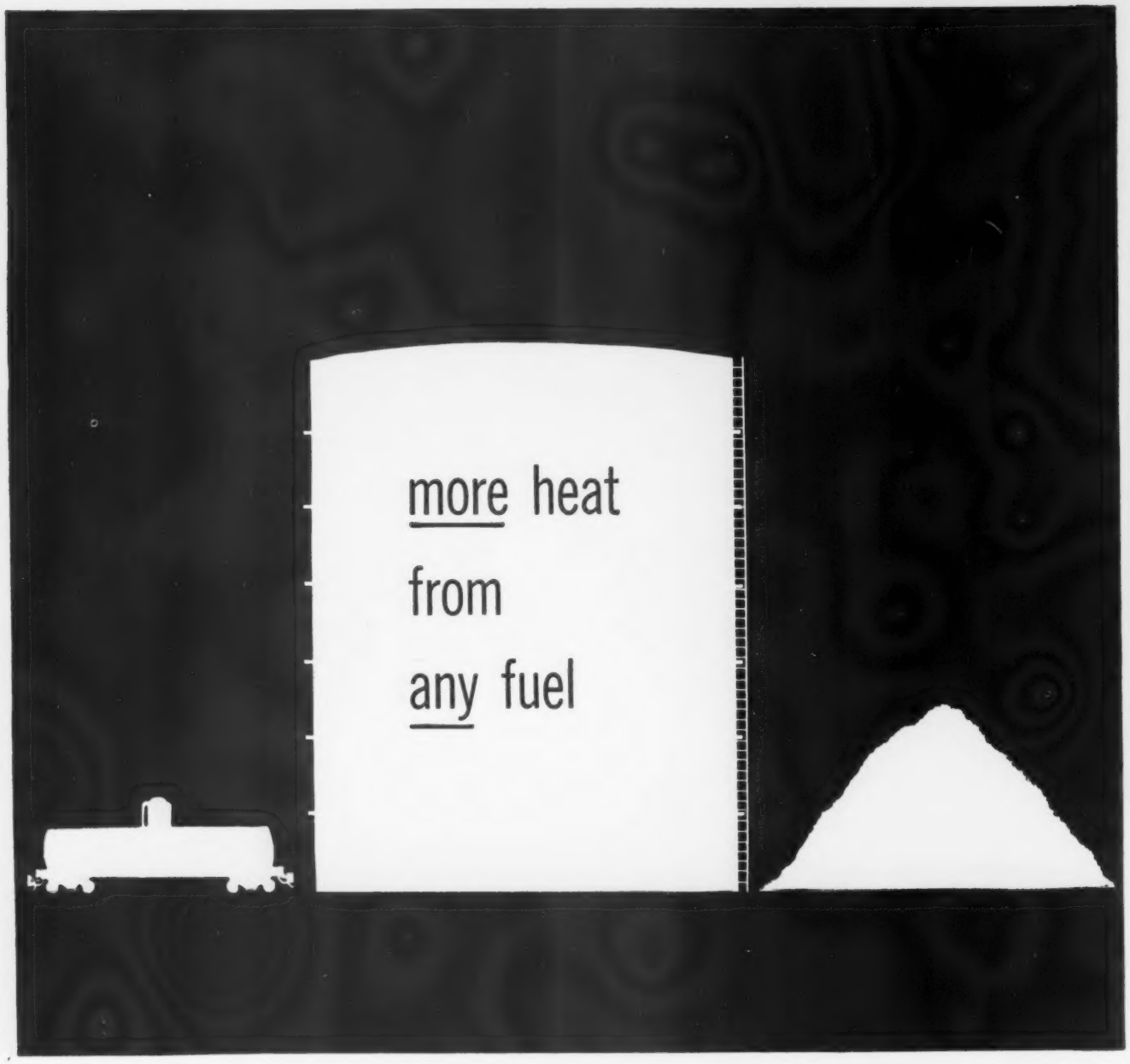
JOY AIR COMPRESSORS
¼ to 600 H.P.
3 to 3656 C.F.M.

DEPENDABLE AIR POWER FOR INDUSTRY

W&D 13100

Consult a Joy Engineer or write for Bulletin

SULLIVAN DIVISION
JOY MANUFACTURING COMPANY
GENERAL OFFICES: HENRY W. OLIVER BUILDING • PITTSBURGH, 22 PA.



Want to be sure of abundant, low-cost heat in mill, factory, warehouse or other industrial or commercial buildings? The answer is Carrier Heat Diffusers.

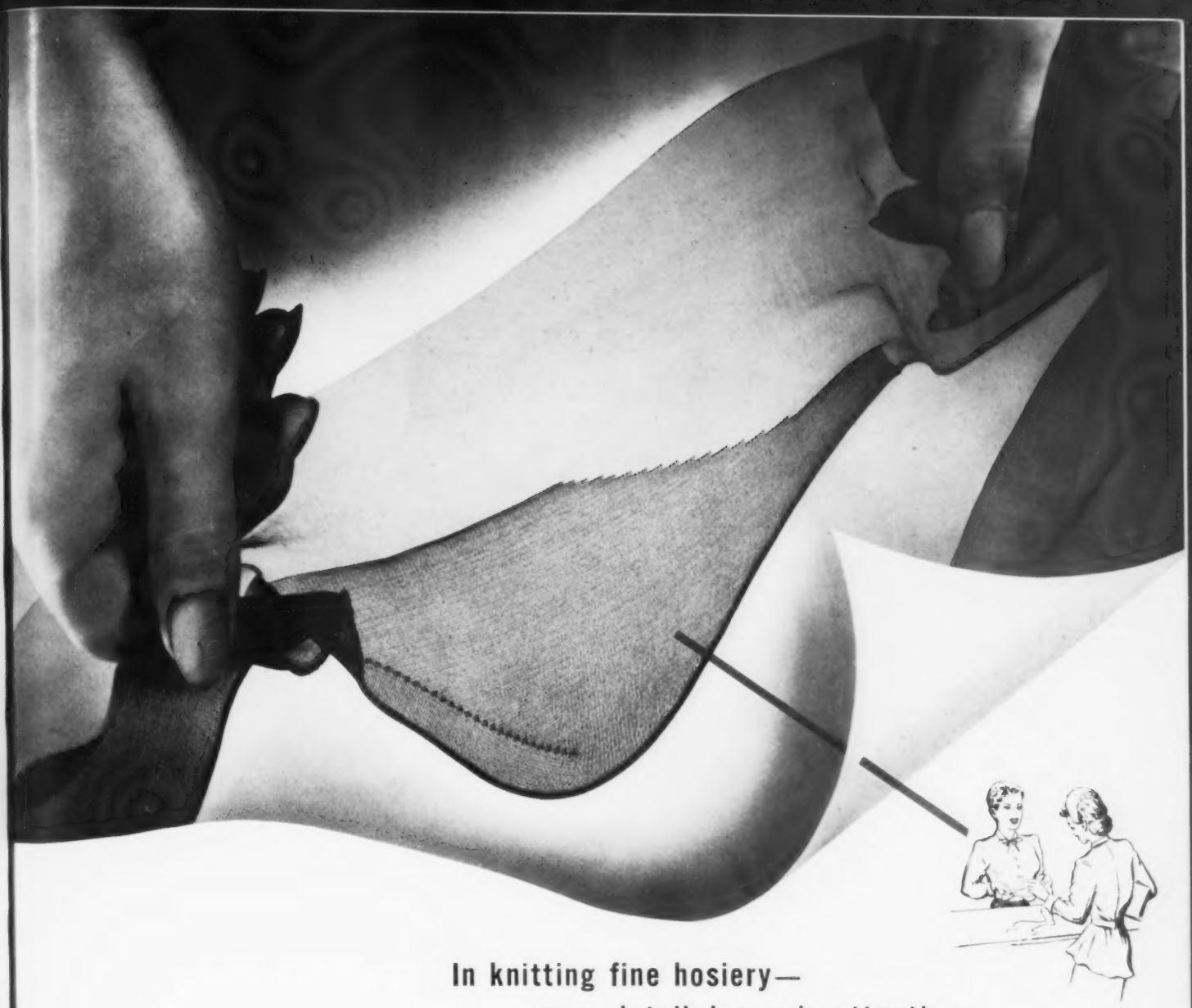
The scientific design of these heavy-duty standard units assures maximum heating economy. Wide uniform coverage is easy with the relatively high velocities of Carrier diffusers. Their adaptability to either low or high pressure steam or forced-circulation hot water systems has made them the choice of the largest industries.

With dynamically balanced centrifugal-type fans, belt-driven through vari-speed pulleys, a wide range of speeds and capacities is provided. Even heat distribution with efficient temperature control (manual or automatic) at full or partial loads is assured with either modulating steam valves on NON-FREEZE tube coils or by face and by-pass dampers (THERMADJUST) to regulate the volumes of heated and by-passed air.

Carrier Heat Diffusers are shipped as complete units—ready to operate. Sectional design permits floor mounting or suspension with vertical or horizontal discharge. Units are adaptable to drying and fog elimination, as well as heating. Sizes in all models available in capacities from 156,000 to 1,570,000 Btu per hour.

Like every Carrier product, these efficient, long-life heat diffusers reflect wide experience and unrivaled engineering skill. These are added values that go along with Carrier industrial heating. Carrier Corporation, Syracuse, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING



In knitting fine hosiery—
every detail demands attention

Take the heel, for instance

As CONSTRUCTION details assume increasing importance in *selling* hosiery today, fine knitting becomes highly essential. For instance, the added comfort, fit and wear provided by special heel constructions depend basically on smooth, uniform knitting.

This is where the machine-controlled temper, finish and dimensions of Torrington needles prove their value. You can rely on Torringtons to help you achieve that perfection of knitting in every important detail that counts in producing quality hosiery.

THE TORRINGTON COMPANY, Torrington, Conn., U.S.A.
ESTABLISHED 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada. *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, California
Broadgate House, 7-10, Eldon Street, London E.C.2, England

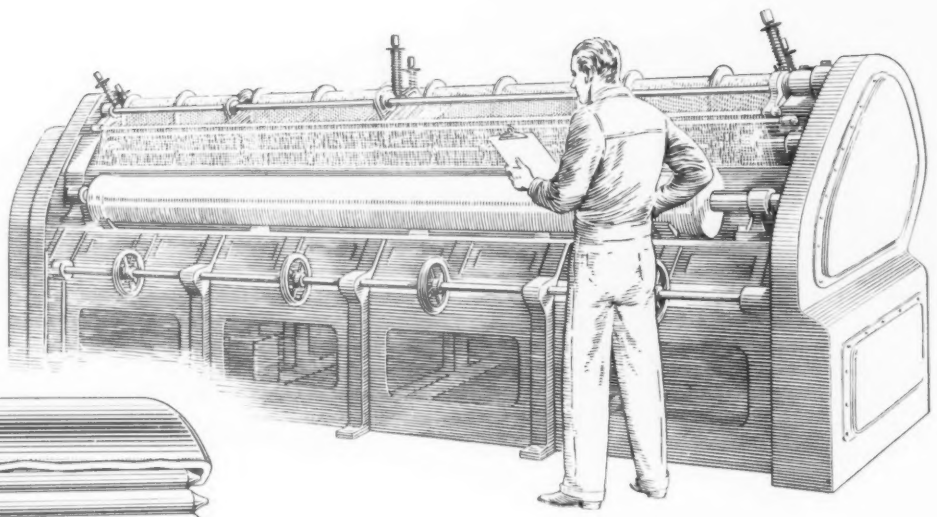
TORRINGTON

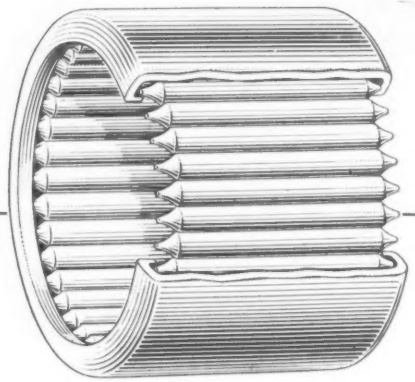
SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

More Uniform Knitting at Higher Speeds

Aided by Torrington Needle Bearings

Torrington Needle Bearings contribute to improved operation of all types of Knitting Machines, Warp (illustrated) and Circular, as well as others common to the Knitting Field.





...efficient lubrication is another advantage of these compact, high-capacity anti-friction units

The smooth, precision action of all sorts of knitting machines equipped with Torrington Needle Bearings produces exceptional stitch accuracy at high speeds.

Typical Applications of Needle Bearings in Various Forms of Knitting Machinery

Pattern wheel drive
Pattern cam and rollers
Yarn feed brake mechanism
Cam shafts
Cam followers
Take-up reels
Yarn feed shaft
Needle bar links
Beam shafts
Idler gears
Guide bar pusher rod
Drum shaft
Cylinder drive shaft
Cylinder support roller
Cloth roller support
Idler pulley hub and Belt pulley shaft
Sinker bar assembly
Cast-off bar

Reduced wear of vital moving parts means less need for adjustments and cam redressing. Greater lubricating efficiency allows longer continuous operating periods before relubrication is required.

To gain these advantages in the textile machinery you design, build or rebuild, call on the specialized experience of Torrington engineers ...and look for Torrington Needle Bearings in the equipment you buy.

THE TORRINGTON COMPANY

Torrington, Conn. • South Bend 21, Ind.

District Offices and Distributors in Principal Cities

TORRINGTON BEARINGS

NEEDLE
SPHERICAL ROLLER
STRAIGHT ROLLER
TAPERED ROLLER
BALL
NEEDLE ROLLERS

NOW

25 MILLION YARDS PER WEEK

BLEACHED IN DU PONT CONTINUOUS PEROXIDE SYSTEMS

THAT'S the total production figure from present installations. And, with continuous bleach construction under way in other mills, the 25 million figure *will soon be doubled!*

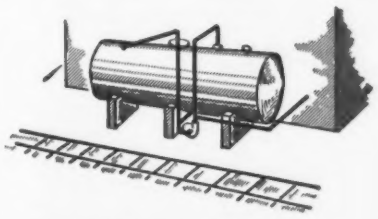
The Du Pont System is the right answer to modern bleaching requirements. It's continuous. It's speedy. It permits quality production. It's most economical. It's adaptable to mill requirements.

We'd like to tell you more about how the Du Pont Rope and Open-Width Systems can fit your bleaching needs. Du Pont bleaching experts will be pleased to work with you, to survey your plant, study your requirements, help you select the proper equipment and assist you in many other ways. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

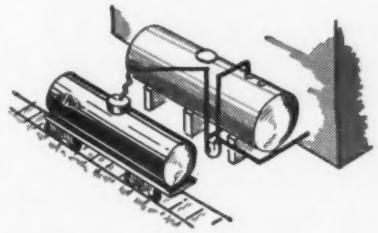
Tune in to Du Pont "Cavalcade of America," Monday Nights—8 p. m. EDST, NBC.

If you need 5000 lbs. or more of "Albone" 35 (35% Hydrogen Peroxide) per month, you'll find a storage tank installation to be economical.

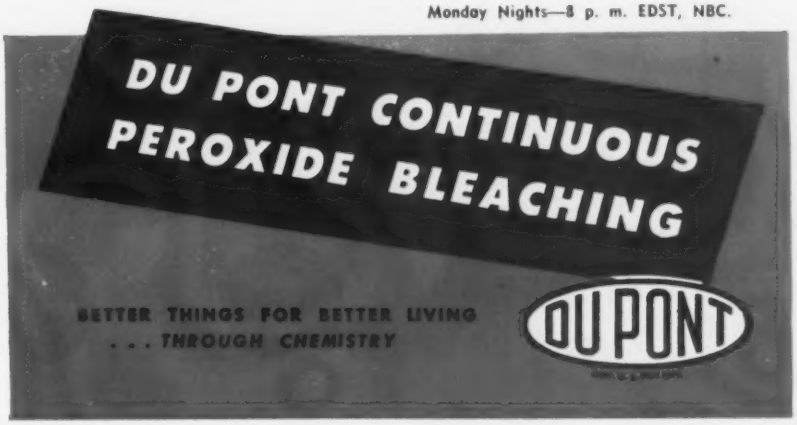
FOR GREATEST ECONOMY, CONSIDER:



TANK STORAGE AT THE MILL



TANK CAR DELIVERIES



SAVE TIME!
SAVE LABOR!
SAVE FLOORS!

with MONORAIL HANDLING

Any American MonoRail installation will lower costs, reduce fatigue, and cut down maintenance for handling. American MonoRail Systems serve many operations in textile mills. They eliminate congestion and spoilage and keep production on schedule without delay.

Consultation with American MonoRail Engineers will reveal why American MonoRail equipment serves many large textile and industrial plants. We invite your inquiry.

SEND FOR BULLETIN C-1. A 56 page book showing successful applications of American MonoRail Systems.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**

You can have

BETTER THAN NEW LOOM BEAMS

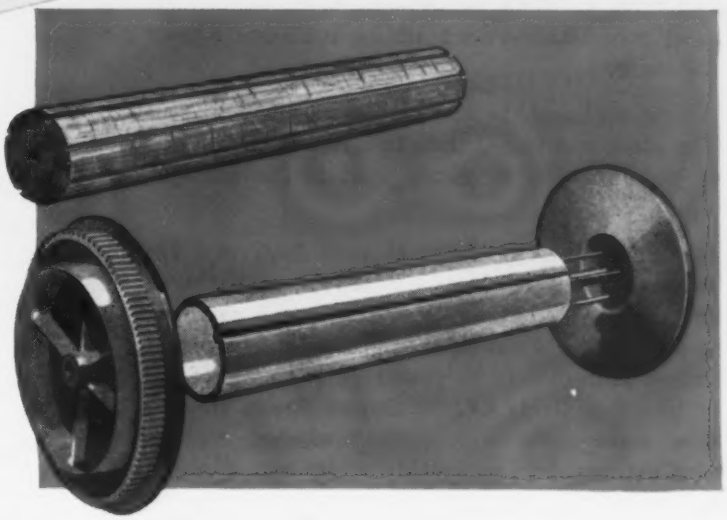
in 2 simple steps

1

Order Alcoa Aluminum barrels, light in weight, corrosion-resistant, non-grooving, from your nearby Alcoa sales office.

2

Replace worn, splintered wooden barrels with Alcoa Aluminum Barrels. They come smooth, stay smooth. Don't warp, splinter or stain by corrosion. Sturdier, but lighter weight for safer, easier stacking.



You can rebuild your loom beams better than new in your own machine shop. Or Alcoa will be glad to refer you to shops that can do it for you. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN ALUMINUM

ALCOA ALUMINUM 1888 1948 60 YEARS OF SERVICE

A VITAL MESSAGE TO ALL OWNERS OF
PYRENE FIRE EXTINGUISHERS

Some Pyrene* Vaporizing Liquid Pump Type Fire Extinguishers (1-pt., 1-qt., and 1½-qt. sizes only) have gone bad as a result of the liquid in them. We want to get them back. We ask your help in returning them for replacement.

SINCE 1907, Pyrene has been a symbol of quality.

No one has ever found a more effective extinguishing agent for its purpose than the liquid supplied to us for Pyrene Vaporizing Liquid Extinguishers.

But, suddenly, and for no apparent reason, something went wrong with this extinguishing fluid. Some time after they had left our plant a number of extinguishers—despite their having passed exhaustive factory tests—began to corrode, and worked either improperly or not at all.

We had no warning whatsoever that this would happen. We had no way to foresee it.

At the first hint of trouble, our own laboratories and those of our suppliers—as well as outside technical consultants—went on an intensive search for the cause.

Now we know the answer. It lay outside our plant. The cause was traced back to a change in the method of preparing the chemicals used in the extinguisher liquid.

The label on the front of each 1-qt. and 1½-qt. Pyrene Vaporizing Liquid Pump Type Extinguisher bears a serial number. If you own an extinguisher in any of the serial-number groups listed, please return it immediately to your regular source of supply or to us at **Dept. RX, 10 Empire Street, Newark 5, New Jersey.** We will, without charge, replace all such extinguishers as quickly as we can. Since there are no identifying serial numbers on Pyrene 1-pint extinguishers, please also return them for factory testing and replacement if necessary.

Please also return for replacement all Pyrene Fire Extinguisher Liquid Refills purchased by you prior to January 1, 1948, from any source. Such liquid in its original shipping carton should be returned if it bears any P. O. No. from 6701 to 12454. Liquid should be shipped on separate bill of lading to us at **560 Belmont Avenue, Newark 8, N. J.**

EXTINGUISHERS TO BE RETURNED

1½-Quart Extinguishers

150781 to 150900	419931 to 449230	505631 to 509630
235486 to 235530	449631 to 458930	510256 to 518255
236731 to 237230	460931 to 461230	520356 to 520955
403106 to 404730	461331 to 478330	532356 to 533748
411998 to 414430	480481 to 494480	539856 to 544312
416631 to 419830	497631 to 504630	

1-Quart Extinguishers

R689558 to R689997	T601801 to T676150	T861051 to T906880
R692644 to R693497	T676251 to T680483	T911051 to T976216
R731288 to R732363	T680651 to T711650	T977051 to T999999
R751698 to R753697	T712151 to T792150	U2 to U27050
T334485 to T380550	T793151 to T843750	U33051 to U33990
T398671 to T485550	T844550 to T845050	U37651 to U38784
T583051 to T585050	T846551 to T853350	U64651 to U79650
T585551 to T601200	T854051 to T854700	U80151 to U100150
		U150151 to U152552

EXCEPTIONS: Some extinguishers listed above have been rebuilt recently and should not be returned. These are stamped around the outlet nozzle with symbols running from A-48 to L-48, or the letter X.

This entire announcement applies only to Pyrene Vaporizing Liquid Pump Type Extinguishers. It does not apply to the 2-quart and 1-gallon Pyrene Vaporizing Liquid Pressure Type Extinguishers or to Pyrene Foam, Gas-Cartridge, Soda-Acid, or Pump Tank Extinguishers of any size, or to Pyrene Air Foam Equipment.

Regardless of cost, we want to replace every one of these extinguishers about which there is the slightest shadow of doubt.

Over the years, Pyrene Fire Extinguishers have become known as the world's finest fire extinguishers. We are profoundly conscious of, and profoundly grateful for, the trust that has been universally placed in our products.

That is why we are making every effort to retrieve and to replace the extinguishers and liquid affected by this problem.

*T.M. Reg. U. S. Pat. Off.

PYRENE MANUFACTURING COMPANY

NEWARK 8, N. J.

CHICAGO ATLANTA KANSAS CITY SAN FRANCISCO

THIS DOES NOT APPLY TO PRODUCTS MANUFACTURED BY PYRENE MFG. CO., OF CANADA, LTD.

AILY NEWS

LATEST EDITION

MONDAY, JANUARY 5, 1948 --- TWENTY PAGES ★ ★ ★ ★

UNISORB MOUNTING FOR RAYON LOOMS AT WAUMBEC MILLS REQUIRES NO MAINTENANCE IN 7 YEARS' SERVICE

Draper X-D Looms weaving rayon at Waumbec Mills, Manchester, N. H.

6 Years in a large, Lawrence, Mass., mill, woolen and worsted looms . . . no maintenance, no replacements.

8 Years in one of the South's largest mills, cotton looms . . . no maintenance, no replacements.

These are neither scattered instances nor the most outstanding examples of UNISORB loom mounting long life. On the contrary, these cases are simply a fair cross-sectioning of the textile industry's experience in "Mounting on UNISORB".

This modern way to mount looms, twisters and other machinery means, moreover, no bolts, no screws, *NO DAMAGE TO FLOORS.*

It means quick, easy inexpensive and sure anchoring *—on every type of flooring.* A special cement binds the UNISORB to the machine feet and the floor — permanent set absolutely prevents any riding.

Correctly installed, in accord with recommendations of Felters Engineers, UNISORB will absorb from 60% to 85% of transmitted vibration and noise. This results in a substantial reduction of shutdown hours, saves on machinery and building wear and repair. And by providing quieter surroundings, UNISORB Mounting increases efficiency — helps toward greater production.

Send for sample and complete specifications. Ask for your copy of "Why it Pays to Anchor Your Machines with UNISORB".

LOOK FOR THE RED CENTER AND UNISORB BRAND MARK

THE FELTERS COMPANY

210-W SOUTH STREET, BOSTON 11, MASSACHUSETTS

Offices: New York, Philadelphia, Chicago, Detroit
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Boxed, Bundled or Baled!

...WITH Acme Steelstrap

Doc. Steelstrap

No matter how your textile product goes, it will move more secure against everyday shipping hazards when banded with Acme Steelstrap.

You save, too, on warehousing space, shipping weight, dunnage, freight claims . . . and profits rise proportionately.

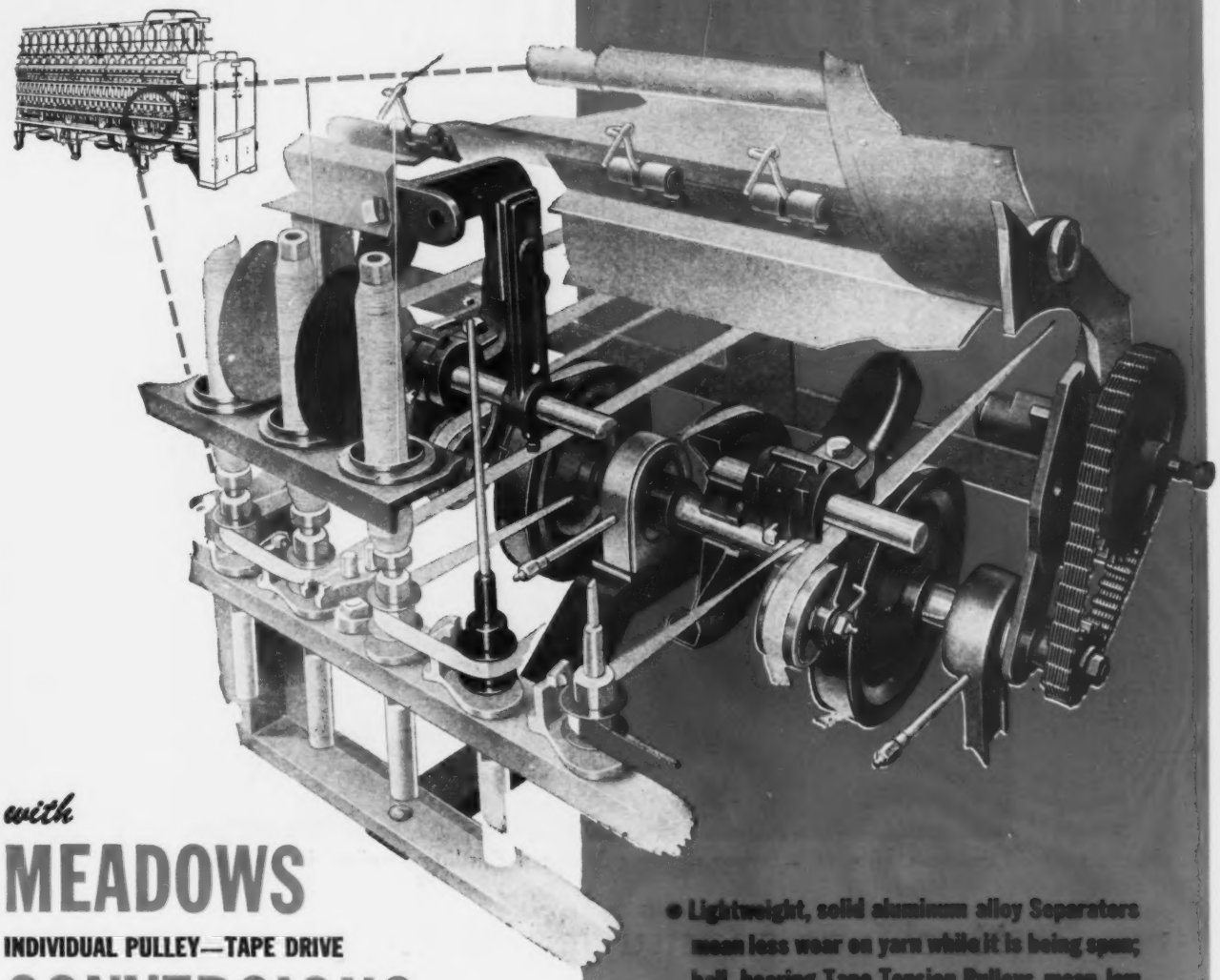
So, whether your textile shipments are single units, carloads of freight, or ships' cargoes . . . use Acme Steelstrap for boxing, bundling, or baling. It means the most efficient shipping pack.

NEW YORK 17 ATLANTA CHICAGO 8 LOS ANGELES 11

Acme Steelstrap

ACME STEEL CO.
CHICAGO

New Life for Old Spinning Frames



with

MEADOWS

INDIVIDUAL PULLEY—TAPE DRIVE

CONVERSIONS

Higher speeds can be obtained from old model band drive frames, with uniform twist, better package and more yarn, by installing the Meadows parts shown in black on the phantom drawing above.

Silent chain-drive means less noise and less vibration; individual driving pulleys and high strength ground and polished shafting, mounted on heavy duty ball bearings, means low power consumption, no more cylinder trouble. Works equally well on frames already tape driven.

- **Lightweight, solid aluminum alloy Separators mean less wear on yarn while it is being spun; ball bearing Tape Tension Pulleys mean low power consumption; no tapes off due to choked or sticky pulleys.**
- **We engineer and service each installation; design and manufacture all parts. Let one of our representatives show you how a Meadows Conversion will increase production on your frames.**

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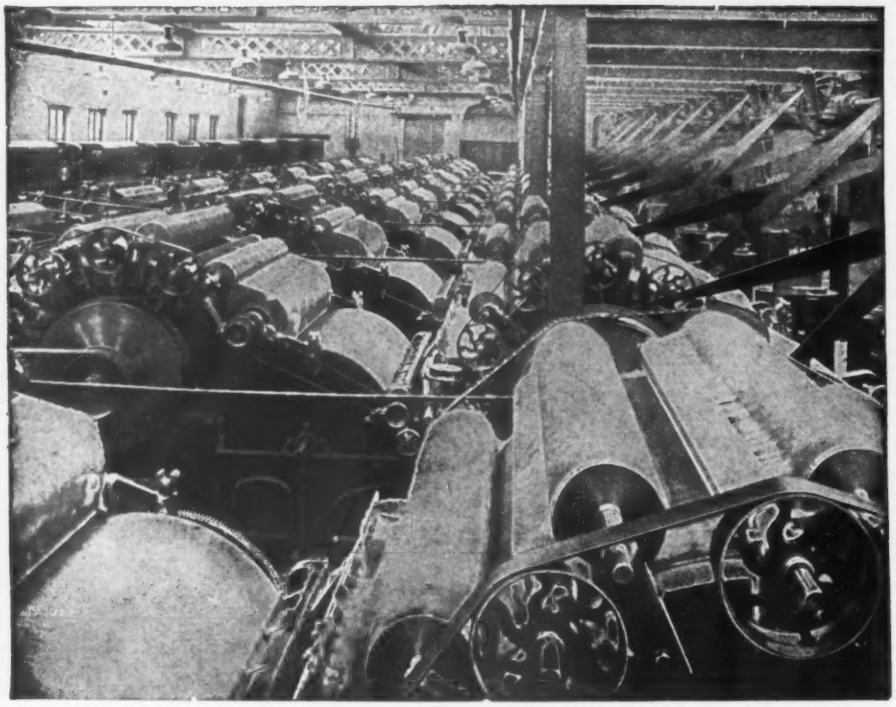
MEADOWS MANUFACTURING COMPANY
ATLANTA, GEORGIA

PLATT'S
WORSTED CARDING ENGINES



Panoramic view of a layout showing Worsted Carding Engines in operation.

Machines constructed in the greatest variety suitable for all types of Wools.

- ***RIGID CONSTRUCTION***
- ***EASE OF ADJUSTMENT***
- ***MAXIMUM PRODUCTION***

Prince·Smith & Stells Ltd.
INCORPORATING TAYLOR WORDSWORTH & Co LTD
CONCESSIONAIRES FOR ALL WORSTED MACHINERY MANUFACTURED BY PLATT BROTHERS & CO. LTD. ASA LEES & CO. LTD.
KEIGHLEY
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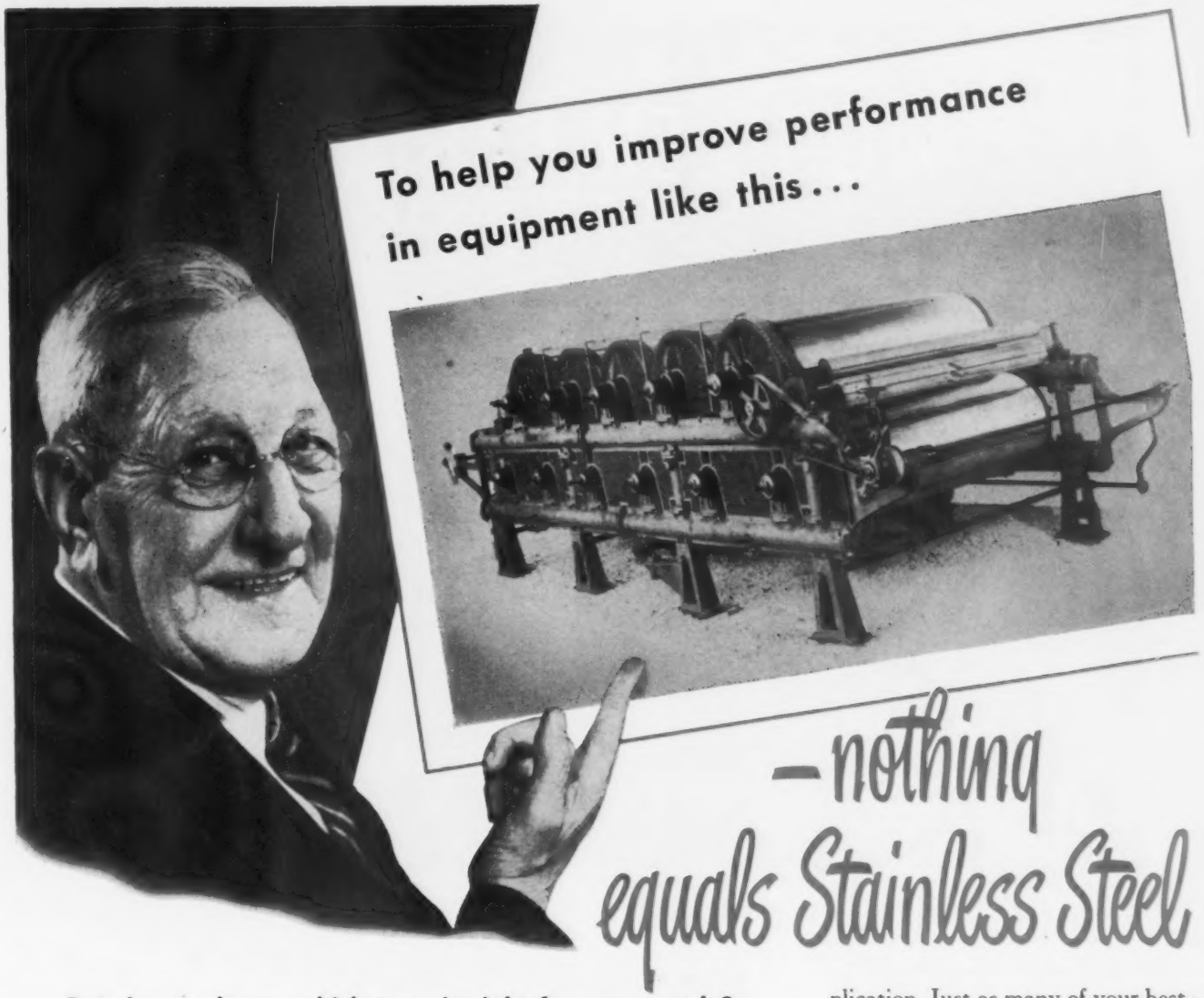
Agents, U. S. A. and Canada—English system machinery. Atkinson, Haserick & Co., 21 Congress St., Boston, Mass. Agents, U. S. A.-French system machinery, The Blake Electrical Mfg. Co., 178 Atlantic Ave., Boston 10, Mass.



But do you know which type is right for your needs?

THE many advantages of using Stainless Steel are well known to the textile industry. In dyeing, bleaching and finishing equipment, Stainless Steel has demonstrated its ability to save money, to increase production, and to improve product quality.

Its use has resulted in closer color control; has speeded up change-overs, prevented color-bleeding, and eliminated losses due to dye-bath contamination, rust and canker. Its record for success has in fact been spectacular.

Once in a while, though, we are told by a textile mill operator that he had built his equipment of stainless steel but wasn't getting the trouble-free runs he had expected. Upon investigation, the explanation in most cases has been quite simple. The equipment had been built with "stainless steel"—merely under the assumption that so long as it was labeled "stainless" it would serve the purpose. Actually, the term "stainless steel" covers a wide variety of superior steels—and each of these steels is designed for a specific type of application. Just as many of your best-grade textiles, while all of top quality, are designed for different uses, the same is true for this group of heat- and corrosion-resisting steels.

That is why we offer textile manufacturers the services and advice of men who spend all their time working with U·S·S Stainless Steel. With years of experience in developing, testing, and applying U·S·S Stainless Steels of all grades, they are equipped to help you determine exactly what particular type of Stainless will do the best, most economical job for you and what is the best fabricating procedure to insure top performance.

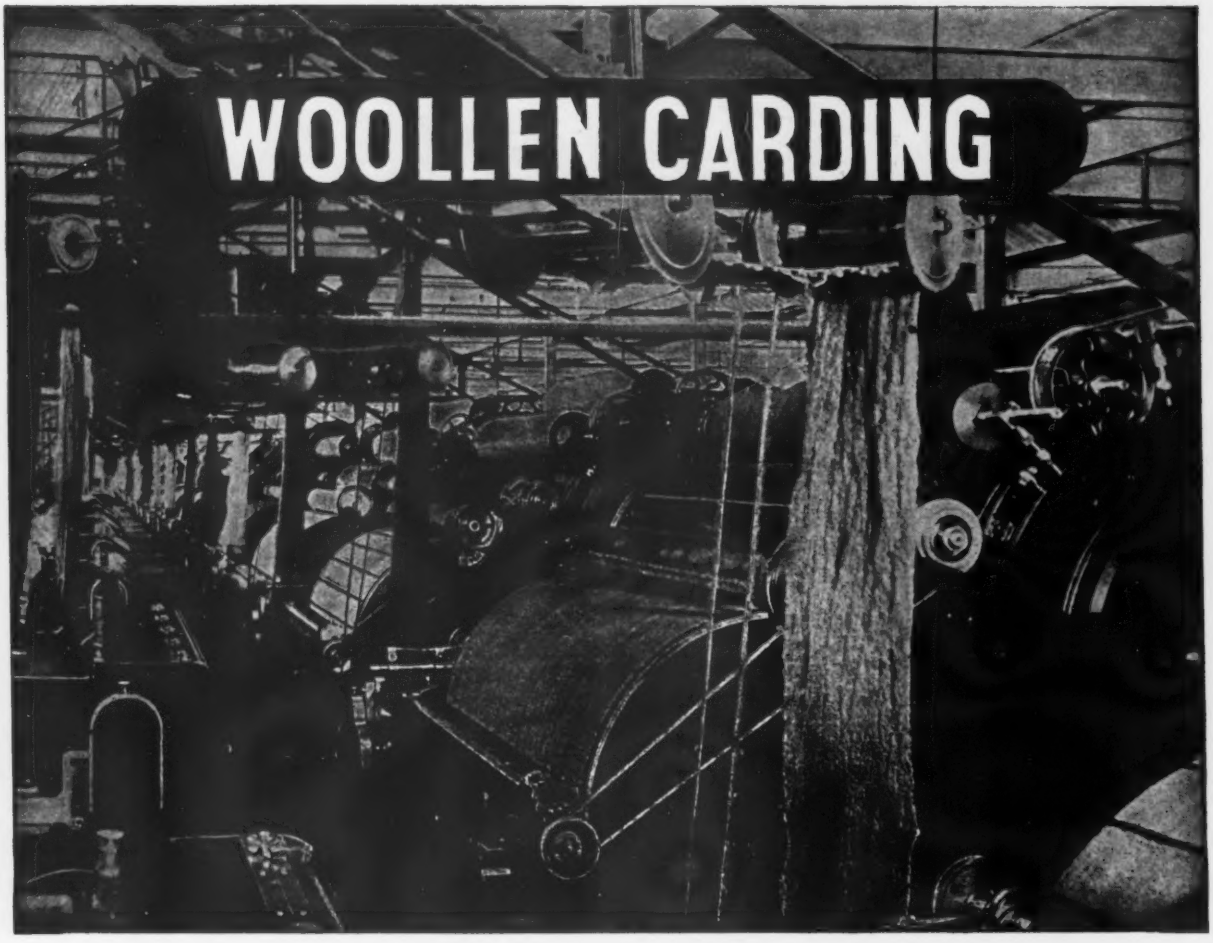
USS STAINLESS STEEL — UNITED STATES STEEL

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

7-931

UNITED STATES STEEL AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago & New York
CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh & Chicago · COLUMBIA STEEL COMPANY, San Francisco
NATIONAL TUBE COMPANY, Pittsburgh · TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham
UNITED STATES STEEL SUPPLY COMPANY (Warehouse Distributors), Chicago : UNITED STATES STEEL EXPORT COMPANY, New York



ENGLISH, SCOTCH and AMERICAN SYSTEMS

Illustration of a modern high production Yorkshire layout showing Scotch feeds between scribbler and carder engines.

Photo. by courtesy of Messrs. J. J. L. & C. Peate, Ltd., Guiseley, Yorks.

Designed by experts and embodying all the accepted principles of modern woollen carding technique for quality production and highest practicable speeds, our machines are precision built and every machine supplied to the trade is backed by a world wide reputation, which means that it is built from the finest quality materials and incorporates every proved feature of modern practice.

A new and comprehensive catalogue describing and illustrating our carding sets for the English, Scotch and American systems, is in printer's hands. Will those interested please apply on their business letter heads, for a copy when available.

Platt Bros. (SALES) LIMITED.

OLDHAM, ENGLAND.

TELEPHONE MAIN (OLDHAM) 3884

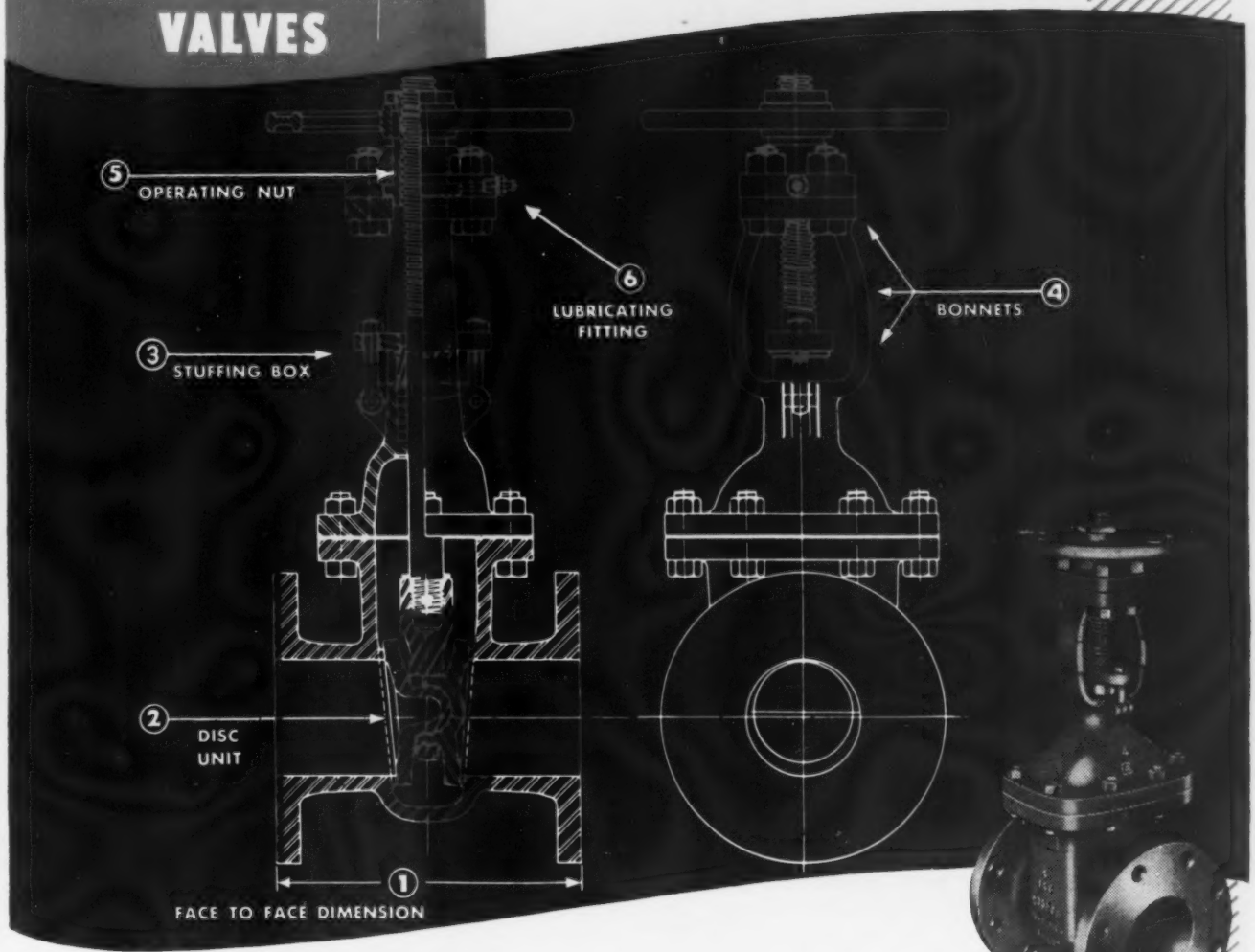
TELEGRAMS TEXTILMAK OLDHAM.

MARKETING THE TEXTILE MACHINERY MADE IN THE WORKS OF PLATT BROTHERS & CO LTD HOWARD & BULLOUGH LTD.

DOBSON & BARLOW LTD BROOKS & DOXEY LIMITED ASA LEES & CO LTD

COOPER CERTIFIED STAINLESS STEEL VALVES

have these unique design features



1. FACE TO FACE DIMENSION
Meet American standards B-16-10-1939 enabling the replacement of valve in a line without cutting or disturbing that line.

2. DISC UNIT
Adjusts itself to the seats in the valve body regardless of angle. Positive sealing insured on the upstream or downstream sides of the discs.

3. STUFFING BOX
More adequate in depth to insure tightness and maximum packing life.

4. BONNETS
Have the exclusive Cooper "Valves That Breathe" feature which compensates for expansion and contraction due to temperature changes without damaging the stem or operating nuts.

5. OPERATING NUT
"Replaceable Operating Nut" eliminates line shut down or breaking of Bonnet Joints.

6. LUBRICATING FITTING
Feeds lubricant to operating nut insuring ease of operation.

Sold thru Leading Stainless Steel Distributors

THE COOPER ALLOY FOUNDRY CO.
HILLSIDE, NEW JERSEY
Specialists in Corrosion Resisting Stainless Steel . . . for a Quarter of a Century

The Quiet is in the Package, too!

Mount a Federal Bearing on a shaft . . . start the motor . . . then listen. The quiet you hear is a silent measure of Federal's over-all precision.

It means the ball track has been ground to a chatter-free finish and to just the right radius. The bore is cylindrical, not tapered or bell-mouthed; sides of the rings are parallel to each other and the ball track; the bearing is neither too tight nor too loose; and it has "purred" its way through Federal's rigid sound tests.

Rounding out this precision package are Federal-manufactured balls, uniformly spherical within .000025" and not varying in diameter more than .00005" in any bearing.

Before any Federal Ball Bearing starts on its way to textile production lines it has gone the route of over 100 individual production, inspection and cleaning operations . . . with *every fourth operator an inspector.*

It all adds up to quiet running and smooth, friction-less operation wherever moving parts turn on Federal Bearings.

Our catalog "K" illustrates the complete Federal Ball Bearing line. Write for it today.

THE FEDERAL BEARINGS CO., INC. · POUGHKEEPSIE, NEW YORK

Makers of Fine Ball Bearings

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Quality *since 1908*

FEDERAL BALL BEARINGS

ONE OF AMERICA'S LEADING BALL BEARING MANUFACTURERS

RAPIDASE
for de-sizing

The dependable, rapid and economical de-sizing agent for cottons, rayons and mixed goods. Applicable over a wide range of processes, temperatures and speeds.

HAS PROVED PARTICULARLY SUITABLE FOR CONTINUOUS DE-SIZING

WALLERSTEIN COMPANY, INC. • 180 MADISON AVENUE • NEW YORK 16, N. Y.

Back Again... and
Barreled Sunlight
REG. U.S. PAT. OFF.
OUTSIDE

Better than Ever!

Barreled Sunlight *Outside White*

The Self-Cleaning Paint that Cuts Maintenance Costs and Stays White Permanently!

We discontinued making BARRELED SUNLIGHT OUTSIDE WHITE when top quality raw materials couldn't be bought, begged or borrowed! But now it's back again — better than ever, the money-saving paint that cuts costs because it spreads farther, flows easier, *stays white for paint life*. It's brilliantly white when you put it on. It becomes whiter and brighter with time because of "controlled chalking" . . . the slow, even, self-cleaning process that keeps the surface always smooth and easily repainted with a minimum of preparation—thus saving time and labor.

This important member of the Barreled Sunlight family is a multiple pigment paint formulated for long-lasting protection and rock-bottom maintenance costs. It brushes on with a substantial film — gives you MORE of the "business part" of paint. Flow, hiding power and meld have all been stepped up — and you'll find economical yardage in its wide spread per gallon. Let a Barreled Sunlight representative inspect your mill village or other residential properties. He can suggest the Barreled Sunlight product that meets your needs exactly for exteriors or interiors of company owned homes . . . in white (or color combinations if you prefer). Write U. S. GUTTA PERCHA PAINT COMPANY, 20-D Dudley St., Providence, R. I.

In the Mill, Barreled Sunlight *throws light* on Lower Costs!

Lighting costs go *down*, worker efficiency *up* when you paint mill ceilings and walls with BARRELED SUNLIGHT WHITE. Experts report important power savings and production savings of 10% or more. Barreled Sunlight, whitest of white paints, stays white longer . . . hides better . . . spreads farther . . . flows easier.

BARRELED SUNLIGHT *Paints*

In whitest white or clean, clear, pleasing colors, there's a BARRELED SUNLIGHT Paint for every job

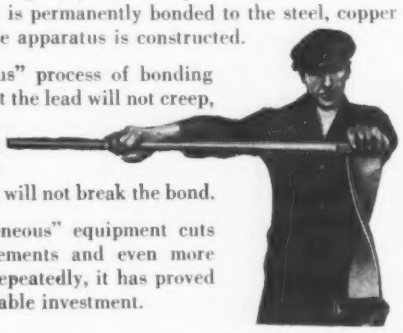
Go Lead for Acid Equipment

Whenever acid corrosion is further complicated by extreme conditions of pressure, temperature or other physical problems . . . go for equipment that can handle these extra jobs. Go for National Lead's "Homogeneous" Lead-lined or Lead-covered Equipment.

You get all of lead's many advantages, plus National Lead's permanent "Homogeneous" bonding.

Here are three reasons why "Homogeneous" equipment makes acid-handling less of a problem.

1 A Bond that's Permanent! National Lead's "Homogeneous" Lead-lined Equipment gives you an inseparable bond. The lead lining (or covering) is permanently bonded to the steel, copper or brass of which the apparatus is constructed.

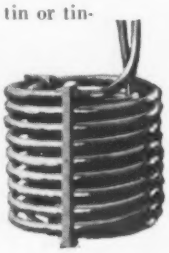


The "Homogeneous" process of bonding is your assurance that the lead will not creep, buckle, or separate. Shock, vibration, full vacuum, high temperature or pressure, will not break the bond.

Rugged "Homogeneous" equipment cuts down costly replacements and even more costly shutdowns. Repeatedly, it has proved itself a sound, profitable investment.

Bonded for Life. *If you clamp a strip of our "Homogeneous" lead-bonded steel in a vise, you can twist it until the steel fractures. But there'll be no parting of the two metals. The bond is inseparable!*

2 Endurance at High Temperatures! There's no tin or tin-lead solder used in the bonding of "Homogeneous" equipment. You can use this equipment safely at temperatures closely approaching the melting point of lead itself (621°F.).



Heating or Cooling? *"Homogeneous" lead-covered copper coils do both jobs well, throughout industry.*

Endurance at high temperatures isn't the whole story either! The "Homogeneous" bond holds fast *even when subjected to rapid changes in temperature.*

Most of the "Homogeneous" processing equipment produced by National Lead is designed for service at elevated temperatures. This includes not only lead-lined tanks, autoclaves and the like, but also lead-covered agitators, propellers and mixing devices of many types.

3 Designed to Order! As acid-handling problems differ, equipment must be designed for each given set of conditions. Every piece of National Lead's "Homogeneous" Lead-lined or Lead-covered Equipment is individually fabricated to your specifications.

This results in efficient, cost-cutting apparatus.

Our Engineering Department offers full cooperation in your fight against acid corrosion. We will gladly offer suggestions on the most economical and satisfactory way for you to use the protection of lead.

You can get "Homogeneous" lead-lined or lead-covered protection for . . .

Acid Car & Trailer Tanks
Acid Columns • Agitators
Autoclaves • Digestors
Heat Exchangers
Vacuum Tanks • Propellers
Heating & Cooling Coils

Go National for Lead

. . . pipe . . . valves . . . sheet . . . lead-lined or lead-covered equipment . . . even complete acid recovery plants. Behind every National Lead recommendation, every National Lead product, are years of experience and many important installations in every field handling corrosive liquids and gases.

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INDANTHRENES
for cotton hosiery

cotton hosiery dyed with **INDANTHRENES**
are fast to • laundering chlorine
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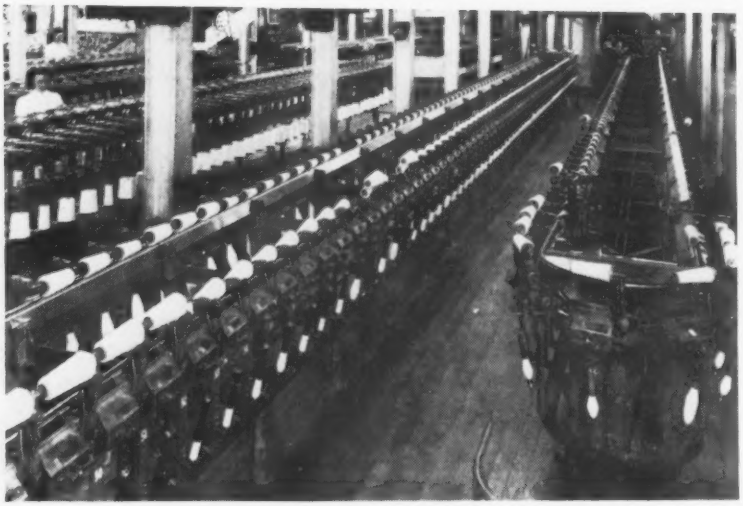
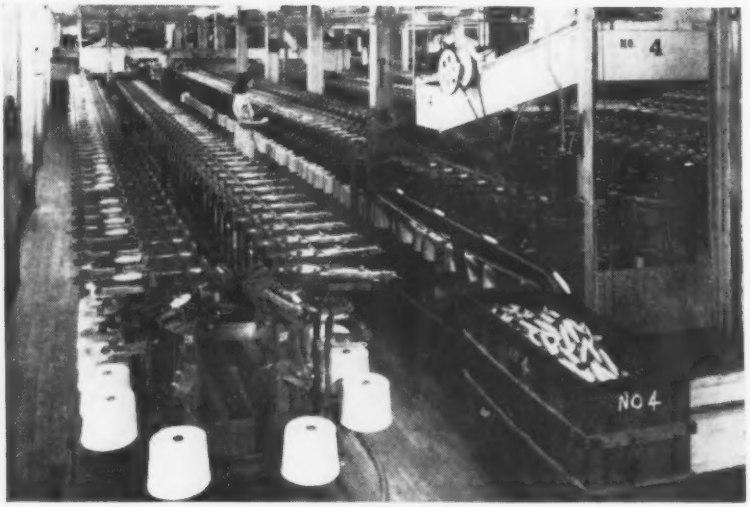
LEADERS IN THE AUTOMATIC WINDING FIELD



The only Automatic Winder that will wind the standard 6" traverse cheeses, warping cones, knitting cones, etc.

Production 900 to 1000 bobbins per hour with one operator



The only fully automatic loom bobbin winder. The empty supply quills and the full wound quills are handled automatically without attention by the operator.

Production 2000 or more quills per hour per operator; cotton, spun fiber, worsted, linen, paper, and filament yarns.

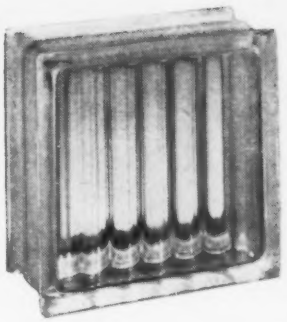
Dyeing and drying equipment for worsted and cut fiber top and for yarns.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Office *Greenville, S. C.*

Why PC Glass Blocks are the mark of a modern building



• PC Glass Blocks are not only smart and modern in appearance—they are also extremely modern in functional versatility, in the many ways in which they help to improve industrial operating conditions.

Panels of PC Glass Blocks admit plenty of clear daylight without color change. The line includes patterns that serve all lighting functions, including directing daylight to areas where it is needed. The insulating value of PC Glass Blocks eases the load on air-conditioning equipment in summer, saves fuel costs in winter.

Easily cleaned and rarely needing repairs or maintenance, PC Glass Blocks also effect a sharp drop in maintenance costs. All of which adds up to important savings.

Whether you are considering new construction or remodeling projects, be sure you have the latest information on PC Glass Blocks. Send the coupon for our new booklet today. Pittsburgh Corning Corporation also makes PC Foamglas Insulation.

Architect, Hugh Nelson. Photo, Courtesy of Continental Rubber Works.

PITTSBURGH PC CORNING ® GLASS BLOCKS

Distributed by PITTSBURGH PLATE GLASS COMPANY
by W. P. Fuller & Co. on the Pacific Coast and by Hobbs Glass Ltd. in Canada

FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

Pittsburgh Corning Corporation
Room 627-8, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send along my free copy of your booklet on the use of PC Glass Blocks in Industrial Buildings. It is understood that I incur no obligation.

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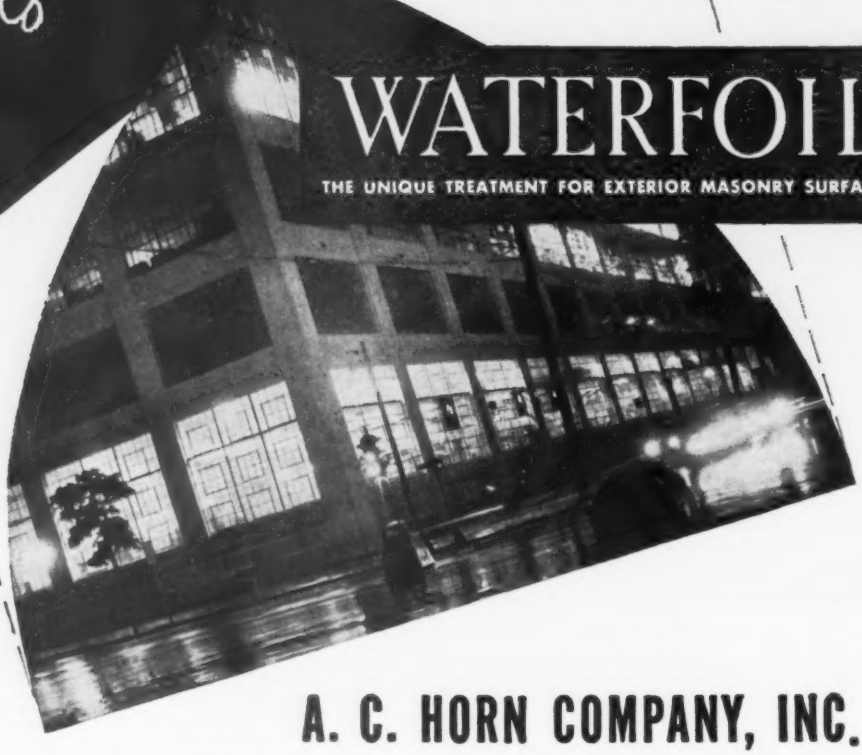
when it rains, buildings need raincoats too!

A bad storm spells danger to building walls and contents. Now it's a simple process to protect and to beautify a "weather-beaten" building with a Waterfoil raincoat. Waterfoil consists of irreversible inorganic gels. Scrubbed into the masonry, Waterfoil bonds not only physically but chemically as well. By impeding water penetration,

but allowing the masonry to breathe, Waterfoil prevents rusting of reinforcing bars, spalling or disintegration of masonry. Save the buildings you have. Write for literature of great importance to building owners.

WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES



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A. C. HORN COMPANY, INC.

manufacturers of materials for building maintenance and construction

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Here's Why

Century Motor Insulation Contributes to Long Life

Windings and Insulation Are Built Into a Rigid Mass That Is Highly Resistant to Moisture and Abrasion

One of the important reasons why Century motors stay on the job is that they are so well protected to resist moisture and abrasion — hazards that often cause motor burnouts. The following information on Century motor insulation shows how Century engineers have solved the problem.

No. 1 — The insulation on the wire insulates between turns of the coil.

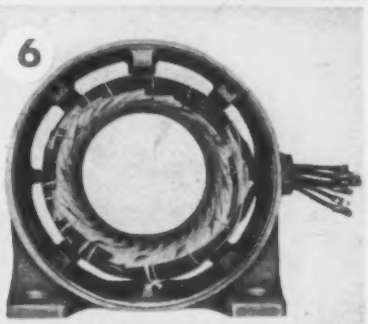
No. 2 — A combination of heavy fish paper and varnished cloth with high dielectric strength forms the slot insulation. This insulates the coil from the stator iron.

No. 3 — Fish paper formed to the correct contour and size insulates the coils from each other in the slot.

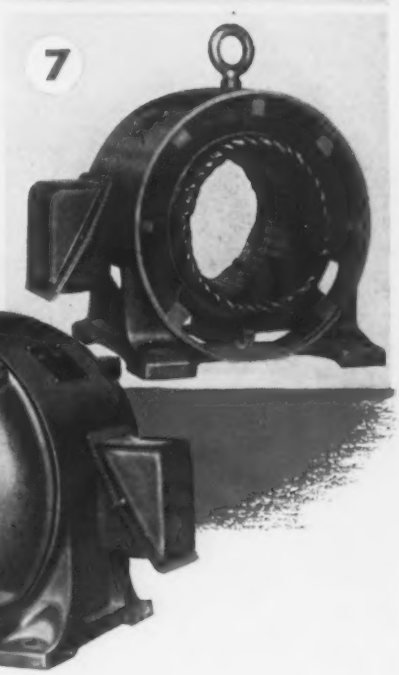
No. 4 — The "U" shaped fiber wedge draws the edges of the slot insulation together, closing the insulation cell, holding the coils in the stator iron — and wedging the coils rigidly in the slot.

No. 5 — Shows how the coils are fitted into each slot together with the three pieces of insulation.

No. 6 — Shows the stator after the winding job has been completed, but before it has been dipped into the insulating compound. Notice the neat compact job of inserting and connecting the coils and lead wires.



The stator is then dehydrated in an oven, and immediately thereafter dipped into Century's special insulating compound and then baked. After each stator is thoroughly baked, repeating this process as necessary, it is given a final coat of heavy air drying varnish for mechanical protection.



No. 7 — The final result is a rigid mass that is thoroughly insulated — highly resistant to moisture and abrasion. The individual wires are held together and sealed to the stator core, eliminating chafing between wires and between coils and stator iron.

Century builds a complete line of electric motors and generators, fractional and integral horsepower, in the popular sizes to meet the requirements of industrial production, commercial uses and appliance applications.

Specify Century for all your electric power requirements.

Century C MOTORS

CENTURY ELECTRIC COMPANY • 1806 Pine St., St. Louis 3, Mo.

533

Offices and Stock Points in Principal Cities

TESTS GIVE RUBBER A GOOD GRIP ON LIFE

The tight adhesion of rubber-to-fabric is an important factor in the long-lasting quality of belting, hose, packings. That's why Quaker technicians are constantly making adhesion tests after samples of rubber and fabric are "welded" by miniature calenders shown above, to assure a tight union.

This is only one of eighteen rigid tests that raw materials and finished products *must* pass before receiving the Quaker stamp of approval. Yes—pre-testing provides quality and long service . . . assures worthwhile dividends for you through higher plant efficiency, lower operating costs.

Call your nearest Quaker distributor for speedy service. He and the Quaker sales engineer are teamed to provide accurate recommendations on Quaker pre-tested belting, hose, packings.

QUAKER RUBBER CORPORATION

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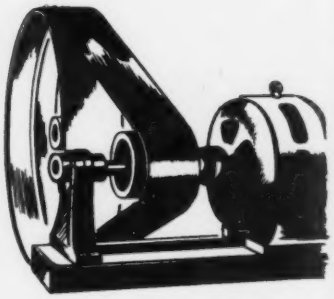
QUAKER RUBBER PRODUCTS

custom made for every industrial use

PRE-TESTING PAYS OFF WITH PEAK SERVICE

Check these pre-tested and proved Quaker products that help reduce operating costs for industries everywhere.

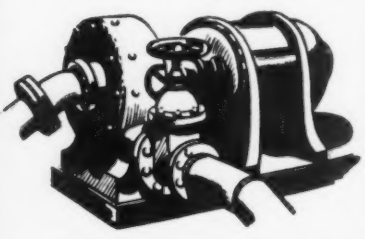


MORE POWER FOR PRODUCTION

In the complete line of Quaker transmission belts and belting pre-testing plays a vital part in providing long service, tight grip, slip-less power. Both V and flat types . . . transmission and conveyor, for all purposes.

STANDS PRESSURE, RESISTS WEAR

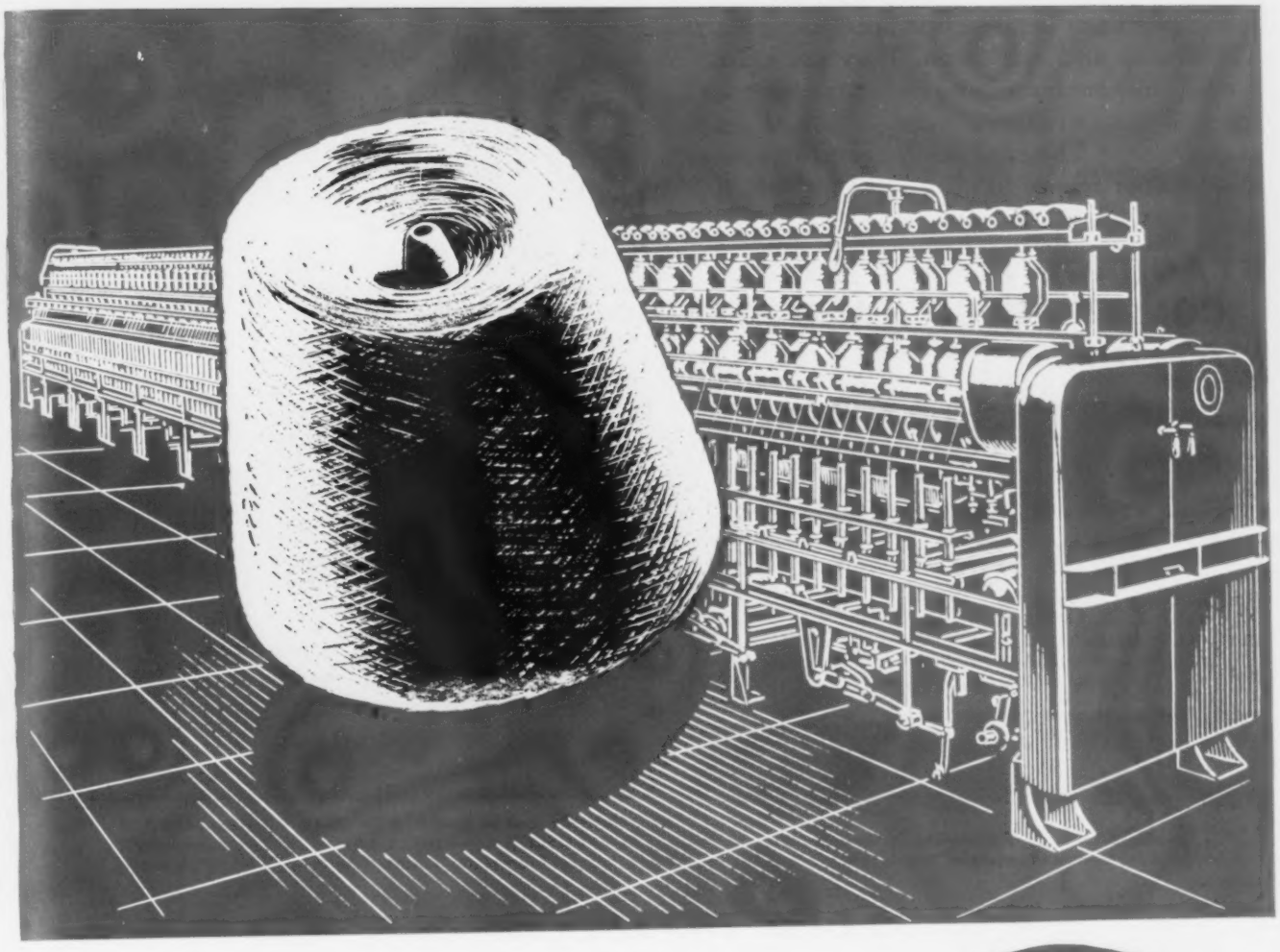
Quaker hose, in moulded and wrapped construction, is ruggedly built of pre-tested materials for trouble-free transmission of air, steam, water, acids, volatiles. Tight adhesion of rubber and fabric resists pressure, twisting, severe wear.



STOPS LEAKS . . . CUTS COSTS

Quaker pre-tested packings for all purposes stop hot leaks cold . . . provide tight-sealing, long lasting service for valves, piston rods, flanges. Ideal for packing against steam, water, acids, volatiles. Call Quaker for solution to your packing problems.

YES! Tycol Alweave Textile Spindle Oils perform better . . . BETTER . . . BETTER



Tycol Alweave Textile Spindle Oils perform better, because:

. . . *Tycol Alweave Textile Spindle Oils* are highly refined, light colored, low viscosity oils recommended for spindles, where speeds of 7500 R.P.M. or higher are obtained.

. . . *Tycol Alweave Textile Spindle Oils* are known for their high resistance to oxidation and ability to maintain body under high temperature.

. . . *Tycol Alweave Textile Spindle Oils* reduce bolster losses, eliminate spindle drag and thread breakage.

For further information about Tycol Alweave Textile Spindle Oils and the rest of Tycol's "engineered lubricant" line, write, wire or phone your nearest Tide Water Associated Office.

TYCOL
INDUSTRIAL LUBRICANTS

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TIDE WATER ASSOCIATED OIL COMPANY
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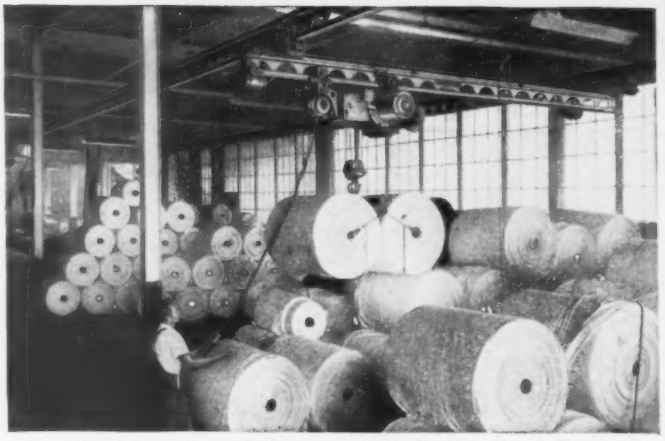
LUBRICATION—"ENGINEERED TO FIT THE JOB"

MATERIALS HANDLING IN THE TEXTILE INDUSTRY

Many textile mills are enjoying numerous advantages possible with Cleveland Tramrail. They are speeding production and lowering costs by eliminating rehandling. They are reducing floor congestion and removing hindrances and confusion. They are aiding safety. They are increasing capacity of storage areas by eliminating need of aisles and piling higher. They are using overhead space to save floor space.



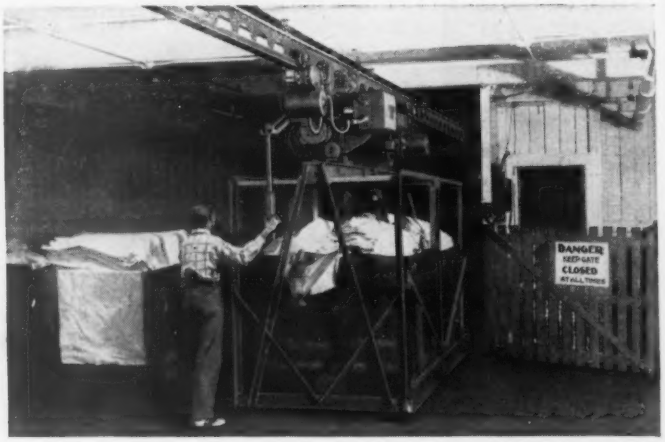
Completely motorized floor-controlled Cleveland Tramrail crane in cloth roll storage makes it easy to handle rolls and pile them high.

STANDARD ITEMS EASILY COMBINED TO HANDLE MATERIALS OF ANY KIND

Cleveland Tramrail raised-tread long-wear rail.

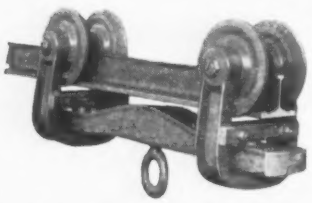
Cleveland Tramrail consists of standard items such as rail, switches, carriers, cranes, hoists, grabs, etc., which can be combined in a thousand-fold ways to serve nearly every materials handling requirement.

Cleveland Tramrail Archbeam in seven sizes for various loads and conditions.



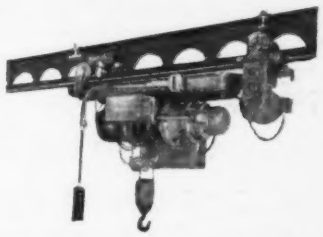
Two floor trucks loaded with cloth are transported at a time, to a distant point without any operator accompanying, with this Cleveland Tramrail automatic dispatch system.

30,000 INSTALLATIONS



Hand propelled carrier built for long life and easy operation. Wheels have hardened tread and flange; bearings are double race type.

Backed by experience with 30,000 installations in industries of all types, Cleveland Tramrail representatives are in exceptionally good position to serve you. They will gladly advise, survey your plant, make layout or prepare quotation without obligation.



Motor-driven carrier with electric hoist. One of many types built by Cleveland Tramrail.

GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
8460 EAST 287th STREET • WICKLIFFE, OHIO

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Ready to Go!

Ready for shipment from stock are these and other hard-to-obtain textile parts, such as clutch gears, worm gears, comb box forks, lickerin shields, bobbin and spindle plate and coupling gears, mote knife brackets, grinding roll brackets, and stripping brush brackets.

We can promise *quick delivery* on such items. Send us your order *today*. All orders will be handled the date they are received. Don't be late with yours.

Southern States SS **Equipment Corp.**

HOME OFFICE AND FACTORY — HAMPTON, GEORGIA

HENDERSON FOUNDRY & MACHINE COMPANY DIVISION

Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

HOW YOUR PLANT CAN
CONSERVE FUEL OIL

by replacing your old oil-fired boiler
with a *Powermaster*
"PACKAGED" STEAM GENERATOR

MANY PLANTS all over the country are reporting 20% to 30% less fuel oil used since their fuel-eating boilers were replaced with efficient "Powermaster" Steam Generators.

FUEL SAVINGS—in gallons as well as dollars—is always a big factor in boiler room operation. Today it is more important than any time since the war emergency to reduce gallons used—to prevent inadequate steam supply for processing, power and heat—to avert plant shutdowns due to insufficient fuel.

YOU CAN EASE the situation in your own plant promptly if you order a fully-automatic "Powermaster"—America's leading "Packaged" Steam Generator—now. And its efficient design means low-cost overall operation that helps you save in many other ways as well. Check the list at the right.

SOME GOOD POINTS ABOUT THE O & S *Powermaster*

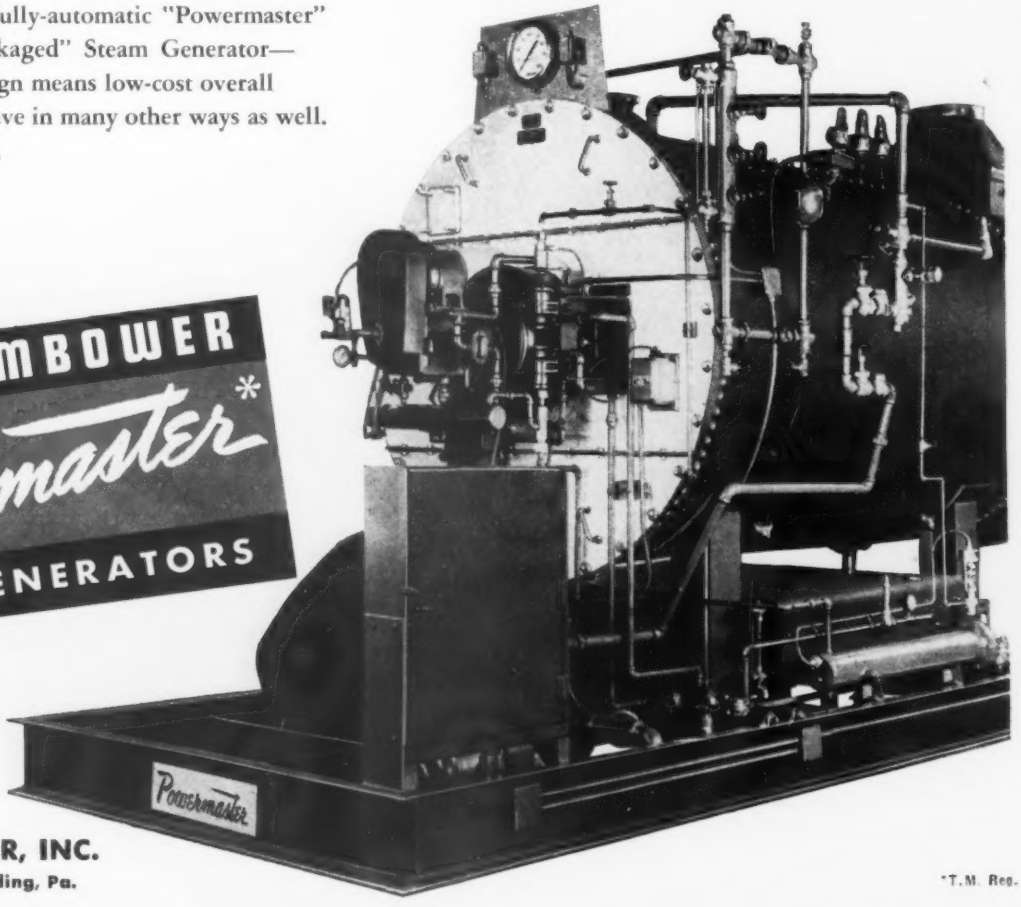
4-UNITS-IN-ONE—Boiler, oil burner, condensate return and control systems compactly "packaged" in a portable steam plant.

OPERATES efficiently with light oil or heavy oil.

FULLY-AUTOMATIC and needs little attention because it automatically supplies just the amount of low-cost steam needed for varying loads.

QUICKLY INSTALLED because it is delivered completely assembled and needs only necessary service connections for speedy operation.

SOLD AND SERVICED only by factory representatives, offering the advantage of one-company responsibility.



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*Powermaster**
STEAM GENERATORS

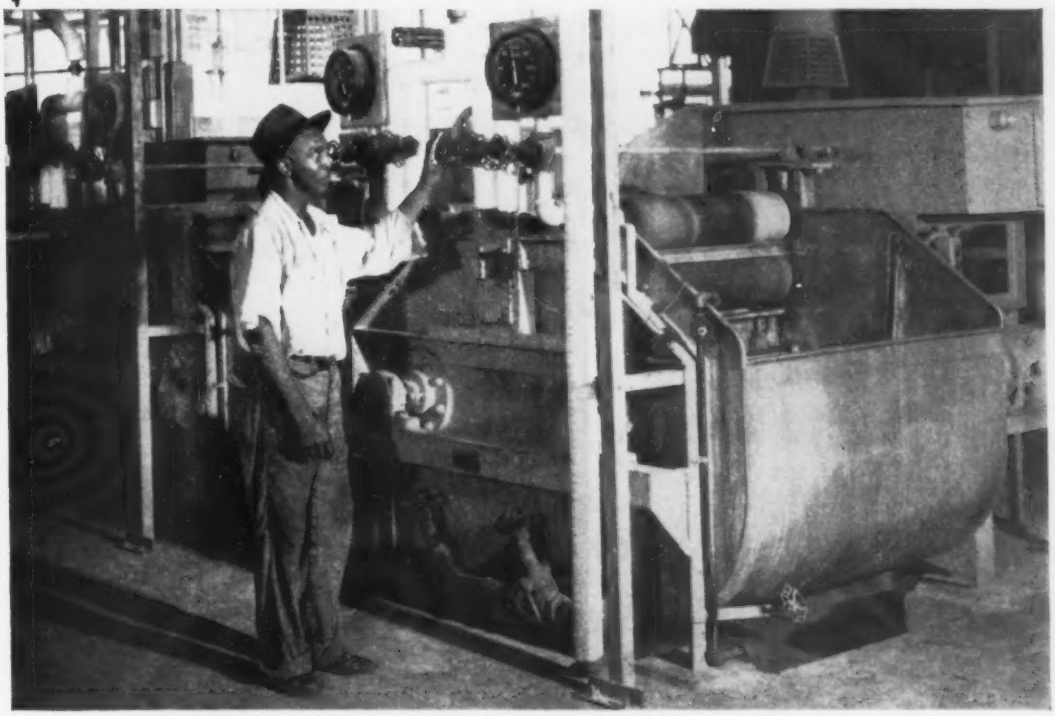
Write for Bulletin #1215 and get full information about the "Powermaster" promptly.

ORR & SEMBOWER, INC.
970 Morgantown Rd., Reading, Pa.

*T.M. Reg.

"STAINLESS STEEL cuts our cleaning costs . . ."

—say dye works superintendents



The stainless steel construction of this continuous dye jig makes it easy to clean—protects fabric colors. Other uses for ENDURO Stainless Steel include dye vats, tanks, kettles, tables, dry cans, rollers, saturators, sticks, racks and bleaching equipment.

● Dyeing equipment made of Republic ENDURO Stainless Steel cuts costs from the day it is installed. *Easy to clean* and to *keep clean,* it puts an end to hard scrubbing with strong caustics. A simple rinsing with plain water—or with a mild cleaning compound—quickly restores its good-as-new condition.

And, because it cleans so easily, ENDURO equipment needs no costly boiling out period . . . makes possible lightning-fast changes from dark to light colors with no danger of color carry-over . . . saves you time.

It will pay you well—in lower cleaning costs and in countless other ways—to investigate *all* the money-saving possibilities of Republic ENDURO Stainless Steel. Booklet 444 is filled with up-to-the-minute information. Write for your free copy.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

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Enduro Reg. U. S. Pat. Off.

STAINLESS STEEL

RESISTANT TO RUST AND CORROSION • RESISTANT TO HEAT • HIGH IN STRENGTH • EASY TO FABRICATE
EASY TO CLEAN • FREE FROM CONTAMINATION • EYE APPEALING • LONG LASTING • LOW ULTIMATE COST

A PRODUCT OF REPUBLIC STEEL

Easier . . . Faster . . . Smoother Piping Jobs when CRANE-equipped throughout

For power, heating or process piping . . . whatever you need, Crane is the dependable source. Buying from the world's most complete line means delivery of what you want . . . valves, fittings, pipe, accessories, fabricated piping . . . in brass, iron, steel or alloys.

Standardize on Crane and you establish a single responsibility for piping equipment. Every step of piping procedure is simplified . . . specifying, buying, installing; including maintenance work. And you're assured good performance, because dependable Crane quality guards every part of piping systems.

Pick up your Crane Catalog and the complete Crane line becomes your partner . . . working for you.

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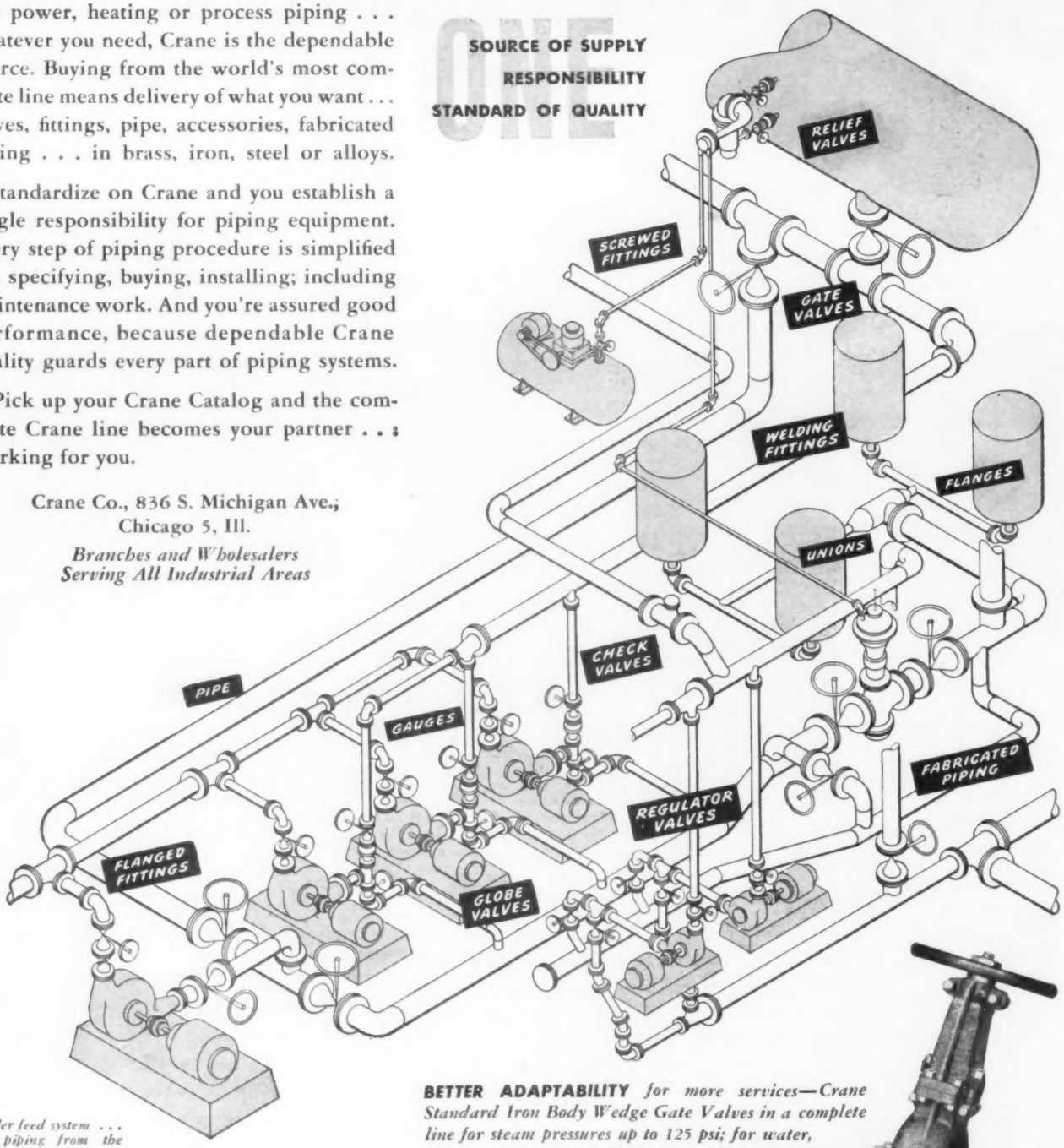
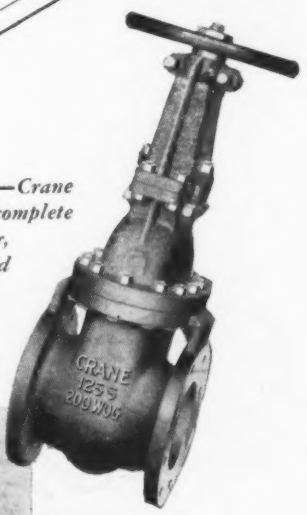
SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



Boiler feed system . . . all piping from the complete Crane line.

BETTER ADAPTABILITY *for more services—Crane Standard Iron Body Wedge Gate Valves in a complete line for steam pressures up to 125 psi; for water, oil or gas up to 200 psi. Made in outside screw and yoke, and non-rising stem patterns; screwed or flanged ends; brass-trimmed or all-iron. In sizes 2 in. and larger. See your Crane Catalog, pp 101-6.*

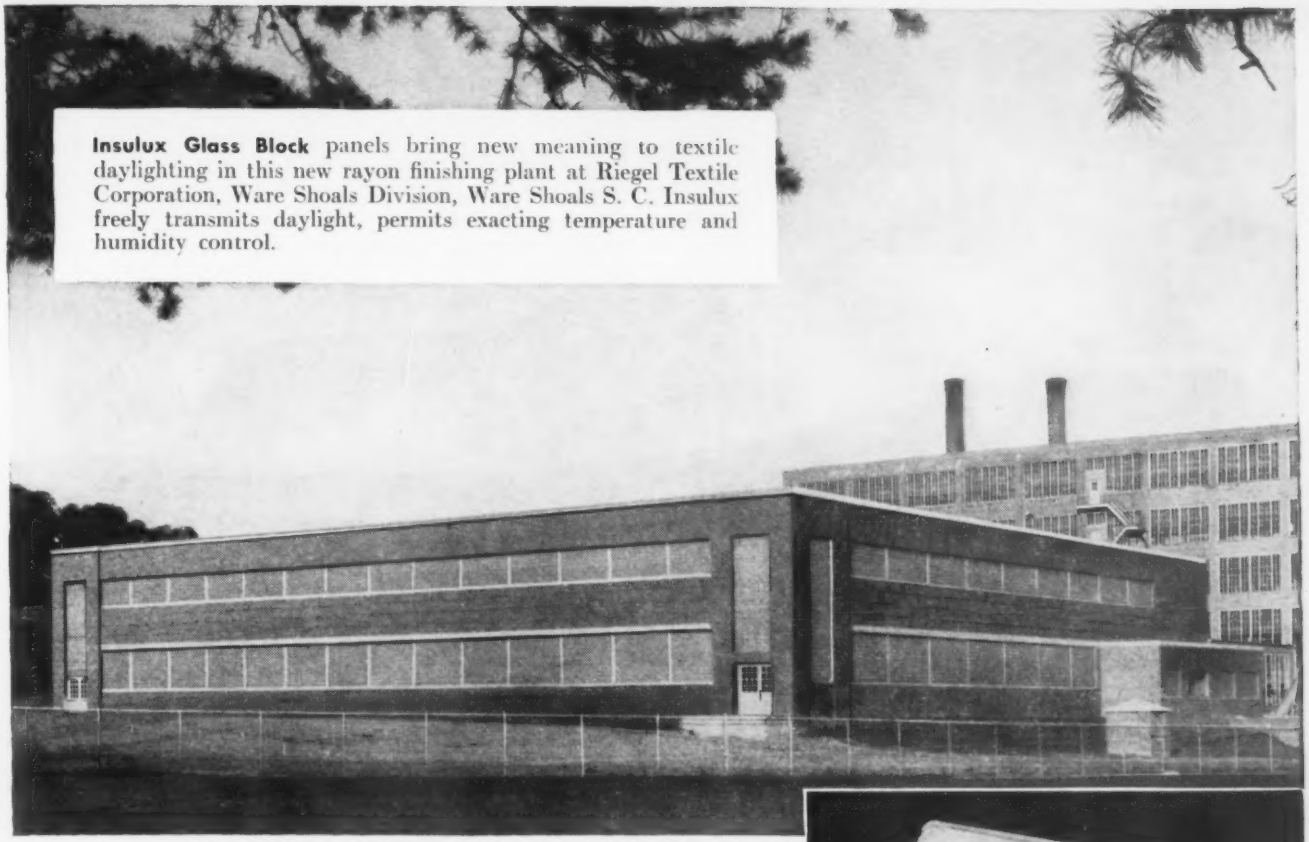


EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM



Insulux Glass Block panels bring new meaning to textile daylighting in this new rayon finishing plant at Riegel Textile Corporation, Ware Shoals Division, Ware Shoals S. C. Insulux freely transmits daylight, permits exacting temperature and humidity control.

Designed by J. E. Sirrine Company and built by Daniel Construction Company

What's the advantage of Insulux glass block in textile mills?

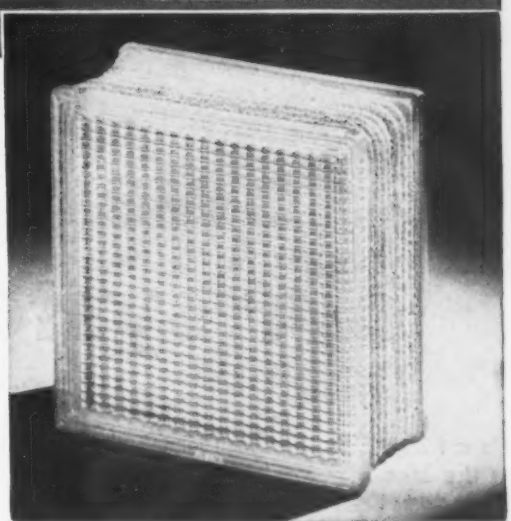
BEFORE you decide about lighting and temperature control in textile mills, consider what Insulux Glass Block can do.

Look at Insulux from *every* angle. You'll discover valuable facts —facts such as these:

1. ***Insulux glass block has a high insulation value—this means less condensation during cold weather.***
2. **Insulux transmits and distributes natural daylight to plant interiors.**
3. **Insulux helps increase productivity (and personnel comfort) because of more-natural working conditions.**
4. **Insulux practically eliminates infiltration, helps keep plant air dust-free and eases the job of humidity control.**

Every Insulux Glass Block is a sealed hollow unit, made of pressed glass. This unique construction offers a remarkable combination of advantages to textile mills—either for new construction or replacement of existing sash.

Investigate Insulux now. Send the coupon below for complete information on how Insulux saves money and increases efficiency in textile operations.



INSULUX

GLASS BLOCK

AMERICAN STRUCTURAL PRODUCTS COMPANY

Subsidiary of

OWENS-ILLINOIS GLASS COMPANY

AMERICAN STRUCTURAL PRODUCTS COMPANY
P.O. Box 1035, Dept. E-201
Toledo 1, Ohio

Gentlemen:

Please send me your free 36 page booklet entitled, "Daylight in Industrial Buildings."

Name _____ *Address* _____

Firm Name _____

City _____ *Zone* _____ *State* _____

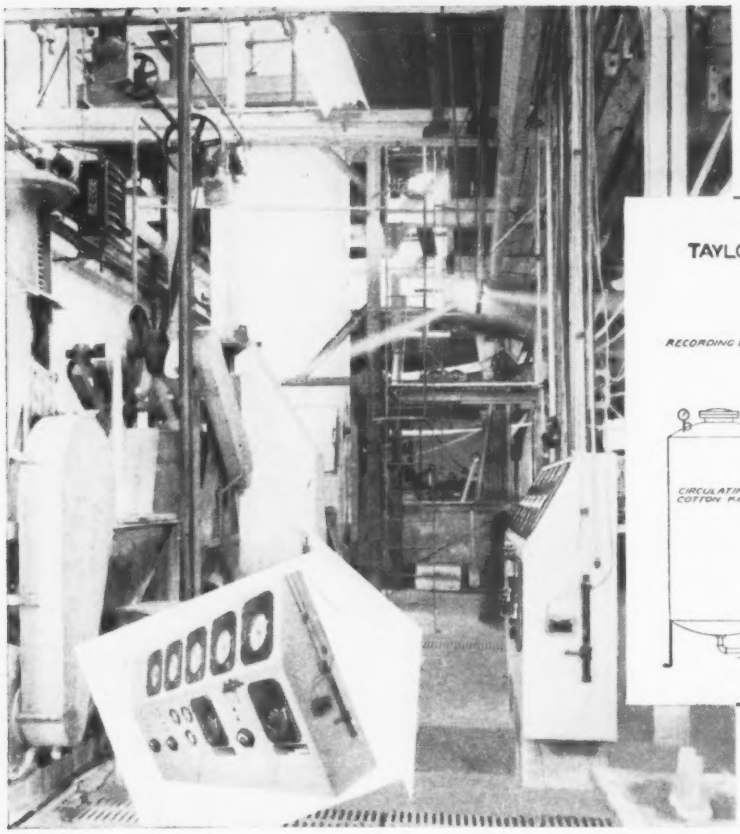
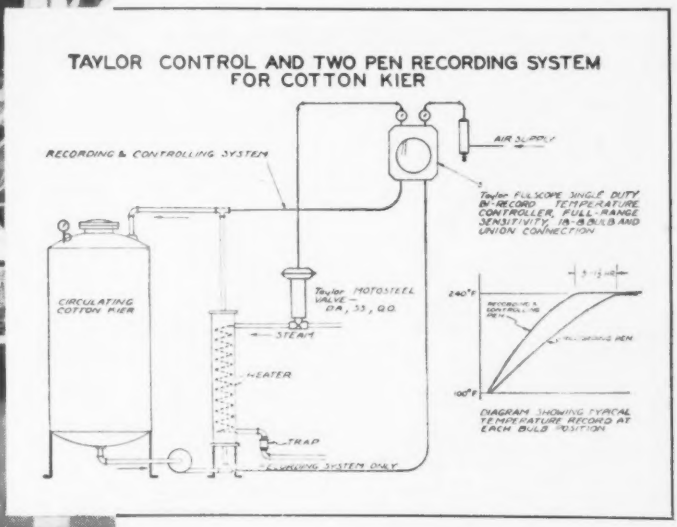


Photo at left shows completely automatic Taylor Control for the new continuous bleaching process.



Drawing above shows completely automatic Taylor Control applied to cotton bleaching kiers.

However you bleach our system's a peach!

It's a fact! Whether you bleach the continuous way or the kier way, you're better off controlling it the Taylor way!

Photo above left shows a completely automatic Taylor Control System for continuous bleaching. A system like this will give you very definite savings in chemicals and in steam—plus greater uniformity of bleaching. It's divided into three distinct phases of control: (1) J-Box control, in any of its variations, (2) Squeeze roll control, (3) Liquid level control.

You may have the whole control system or any part. But we'd like to point out that *completely automatic control of continuous bleaching* greatly reduces chance of human error. You'll have no more worries over the possibility of lax manual control, no expensive mistakes or waste of chemicals in spill-overs. The instruments may be installed either on a central control panel, or near the processing units.

Drawing above right shows typical automatic Taylor Control for a conventional cotton kier. This system assures uniform bleaching, saves steam and chemicals, and has this distinctive feature: the instrument is a Single Controlling and Bi-Recording Fulscope designed to show when the temperatures coincide, telling you that complete bleaching is occurring.

For complete details on either of these two types of automatic Taylor Bleaching Controls, ask your Taylor Field Engineer. Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

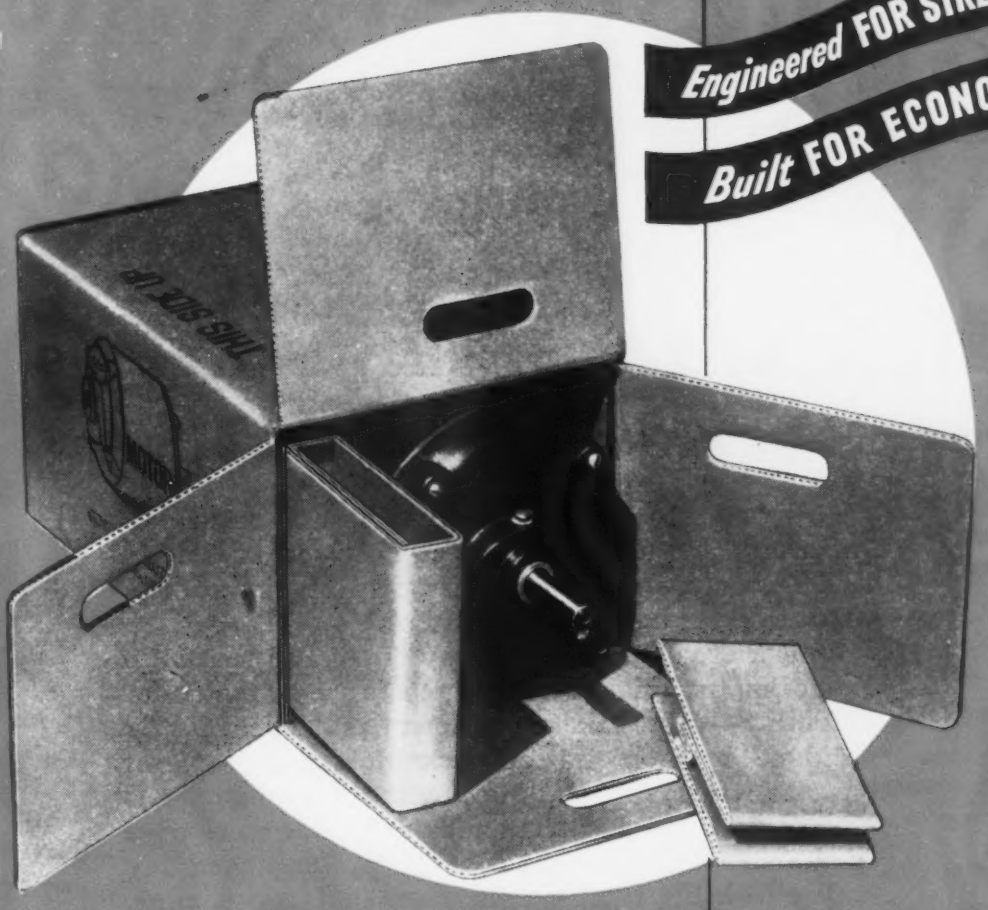
Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

H & D BOXES

Engineered FOR STRENGTH

Built FOR ECONOMY



H & D corrugated boxes do more than protect in transit; they cut packing time, material costs, freight charges—pare distribution expense to the core. Easier to handle, warehouse, sell, H & D-packed products bring more profits to the manufacturer . . . . at less cost to the buyer. Remember—H & D boxes make a good product better. Consult the H & D Package Laboratory on ALL packaging problems.

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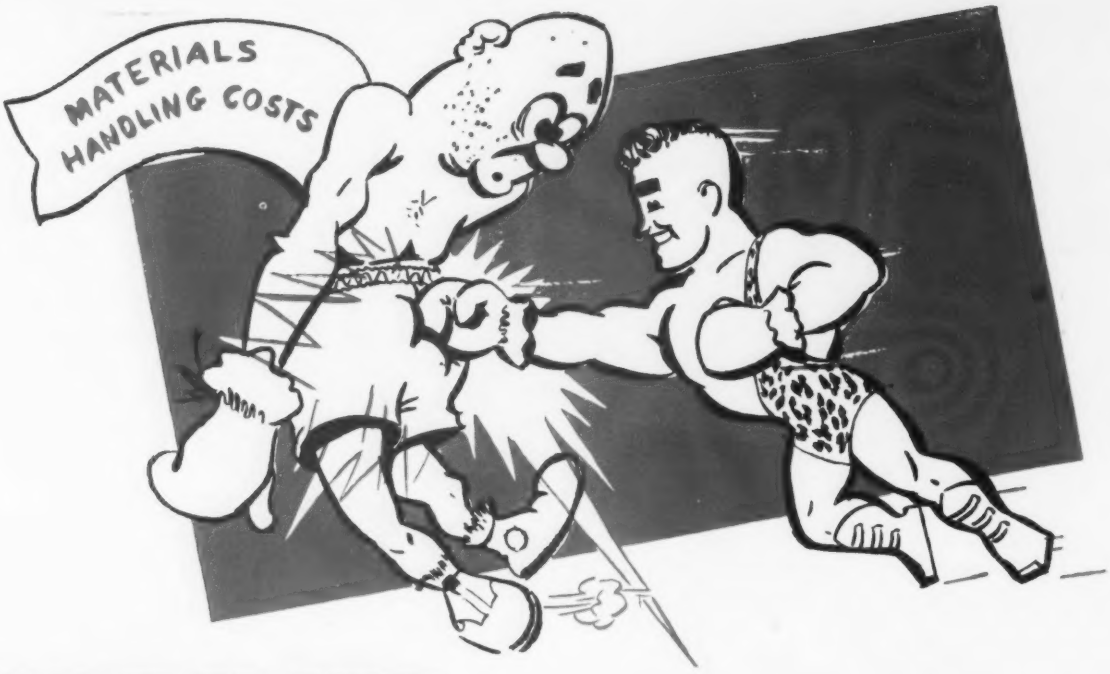
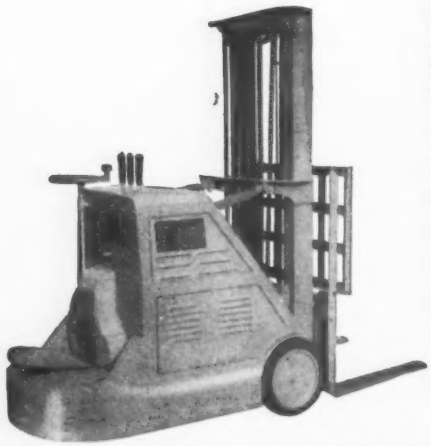


MOBILIFT *"The Mighty Midget"*

A Cost Cutter with a Punch!

It's a tough battle, this constant fight to keep production costs down. Shortages keep material costs up. Labor costs are high and steadily increasing. Taxes are as high as ever.

But there is one logical way out—and that is in handling materials. Handling costs are no match for Mobilift—affectionately known as "The Mighty Midget" by thousands of users. Mobilift, because of its size, its ease of handling and its all around operating speed has many economies. It makes more trips per hour—moves more tonnage per day than any other fork lift truck on the market. It saves time, space and human energy. It cuts handling costs in every department from the loading platform to the warehouse. Put the Mighty Midget to work cutting costs in your plant or warehouse. Send for our 16-page illustrated folder on modern Mobilift operation.



MOBILIFT CORPORATION T-2
835 S.E. Main St., Portland 14, Oregon

Please send me your illustrated folder on Mobilift operation.

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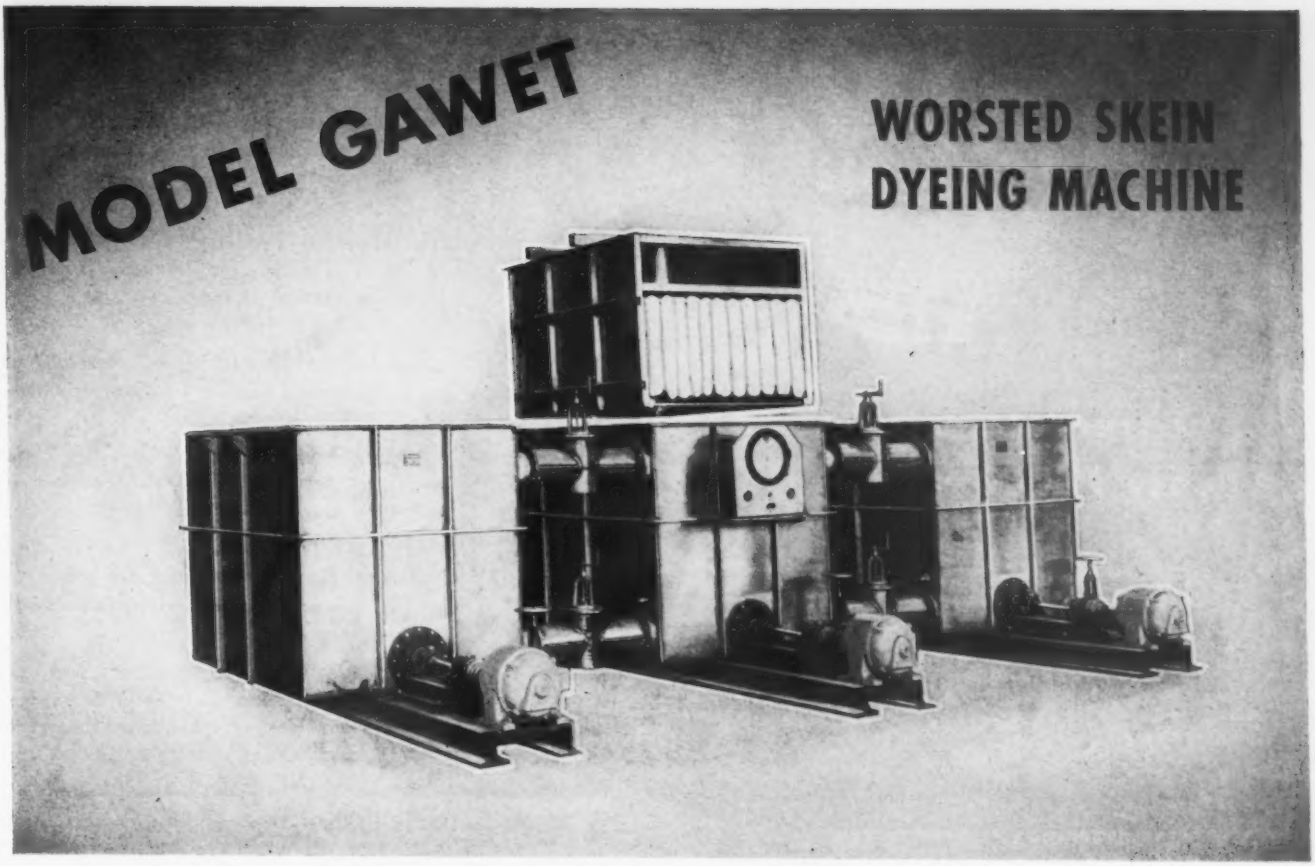
MOBILIFT
"The MIGHTY MIDGET"

SALES OFFICES IN MAJOR CITIES

MODEL GAWET

WORSTED SKEIN DYEING MACHINE



PROVED EFFICIENT BY YEARS OF SUCCESSFUL MILL OPERATION. No other machine can produce its quality dyeing of fine worsted yarns.

The drawbacks of the present methods of worsted skein dyeing are well known to dyers. Felting of fine yarns cannot be avoided with resulting entanglement of the skeins and finally unlevel dyeing due to the slow distribution of the dyestuff.

All these faults have been eliminated with the "Gawet" Machine. There is no possibility of felting or tangling as the skeins remain stationary, held on a material carrier between sticks in a staggered position. Even Dyeing is made possible by the propeller-directed flow of dye-liquor at great speed, but at low pressure without channelling.

A PATENTED AND EXCLUSIVE FEATURE

Single machines range in size up to 250 pounds capacity with a single yarn carrier. The 250 pound units can be coupled at any time with additional machines for larger total capacities. This enables the operator to produce single batches of any desired quantity by simply opening connecting valves.

The "Gawet" is the only machine developed for the Dyeing of FINE Quality Yarns. For Hand or Machine Knitting where loftiness and natural feel of yarn must be preserved.

Heavy Wool and Cotton Yarns can also be Dyed with this machine.

"ALL STAINLESS STEEL CONSTRUCTION"

Obermaier
Reg. Trade Mark

Standard Fabricators
(INCORPORATED)

Stienen
Trade Mark

355 WALTON AVENUE — NEW YORK 51, N. Y.

Laurel Boil-Off Oils and Compounds for more effective degumming of pure silk, rayon and cotton mixtures.

Laurel Emulsions and Softeners for better quality, better knitability, proper conditioning, proper regain.

Laurel Hosiery Finishes for softer, smoother appearance, greater freedom from snags, more wear.

Laurel Nylon Finishes for speedier processing, improved hosiery quality.

Laurel Olamine, cation active softener for exceptionally soft finish on dyed rayons.

Laurel Rayon Oils for faster, softer yarns, improved appearance and hand of your rayon.

Laurel Ruxite Coning Oils for superior lubrication, greater pliability, fewer breaks, higher winding efficiency.

Laurel Rayon Size for smoother, stronger, cleaner, more resilient rayon warps.

Laurel Textile Oil, a favorite of hundreds of customers because of its unusual versatility for improved quality and finish of fiber and fabric.

Laurel Wool Oils for maximum lubrication.

Laurel Wool Scouring Compounds for speedier detergent action, clearer, more even dyeings, cleaner, softer, loftier wool.

Laurel Special Finishes, Water Repellents, Mildewproofing and Flameproofing Compounds.

Yes, no matter what fiber or combination of fibers you are using, you will find there's a Laurel Product that will give you exactly the finish you desire.

For over thirty-seven years Laurel has been meeting successfully myriad challenges of leading dyers, bleachers and finishers. From this reservoir of experience and service has come the long line of Laurel processing agents to give you better, more efficient processing for every dollar you spend.

Plan now to get the extra benefits Laurel Soaps, Oils and Finishes impart to your fibers or fabrics. Ask Laurel Technicians for their recommendations on your next processing job.

soaps, oils, finishes

LAUREL SOAP MANUFACTURING CO., Inc.

Wm. H. Bertolet's Sons

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Revolution in the Corn Belt

This is the story of two farmers.

Everybody in the Corn Belt knows Old Jed, who fought mechanization, crop rotation and county agents . . . and then sent his son, Tom, to the state agricultural college.

And everybody knows young Tom, who grew up in the 4-H Club and the Future Farmers of America, and learned that farming is a business—just about the most important business in the world.

For years Old Jed set aside no cash for seed; he used the most likely looking ears saved from his own crop. Young Tom set aside the cash to buy the finest hybrid seed in order to guarantee his future crop. Tom's yield consistently exceeded Old Jed's . . . brought an extra $900 on each 60 acres.

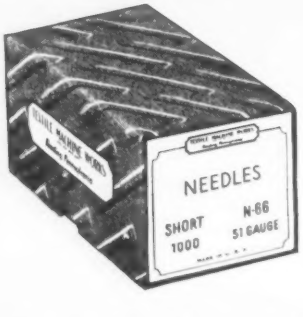
Last fall at harvest-time Old Jed told his bank to open a special account for "seed corn" in his name. And if you don't think that's a revolution, you don't know Old Jed.

Do you really have the money that you charged off for Depreciation in the past years? Is it part of your "current" assets . . . or is it earmarked as a separate fund under "fixed" assets?

Write today on your business stationery for your copy of "Good Housekeeping in Business" —a pamphlet which presents what we believe to be a *logical* basis for handling depreciation money. We will be glad to send it to you.

TEXTILE MACHINE WORKS

READING, PENNA.



Recipe for Charm . . . Sheer beauty, flawless construction, all the ingredients of charm are molded into full-fashioned stockings. To assure superior full-fashioned knitting results, TMW Needles are "Fixture Drawn"*. This special TMW patented process holds the needles straight and true. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

* Reg. U. S. Pat. Off.

TEXTILE MACHINE WORKS • READING, PA.

AS *Modern* AS THE *Rayon Industry*

AND STANDARD FOR THAT INDUSTRY

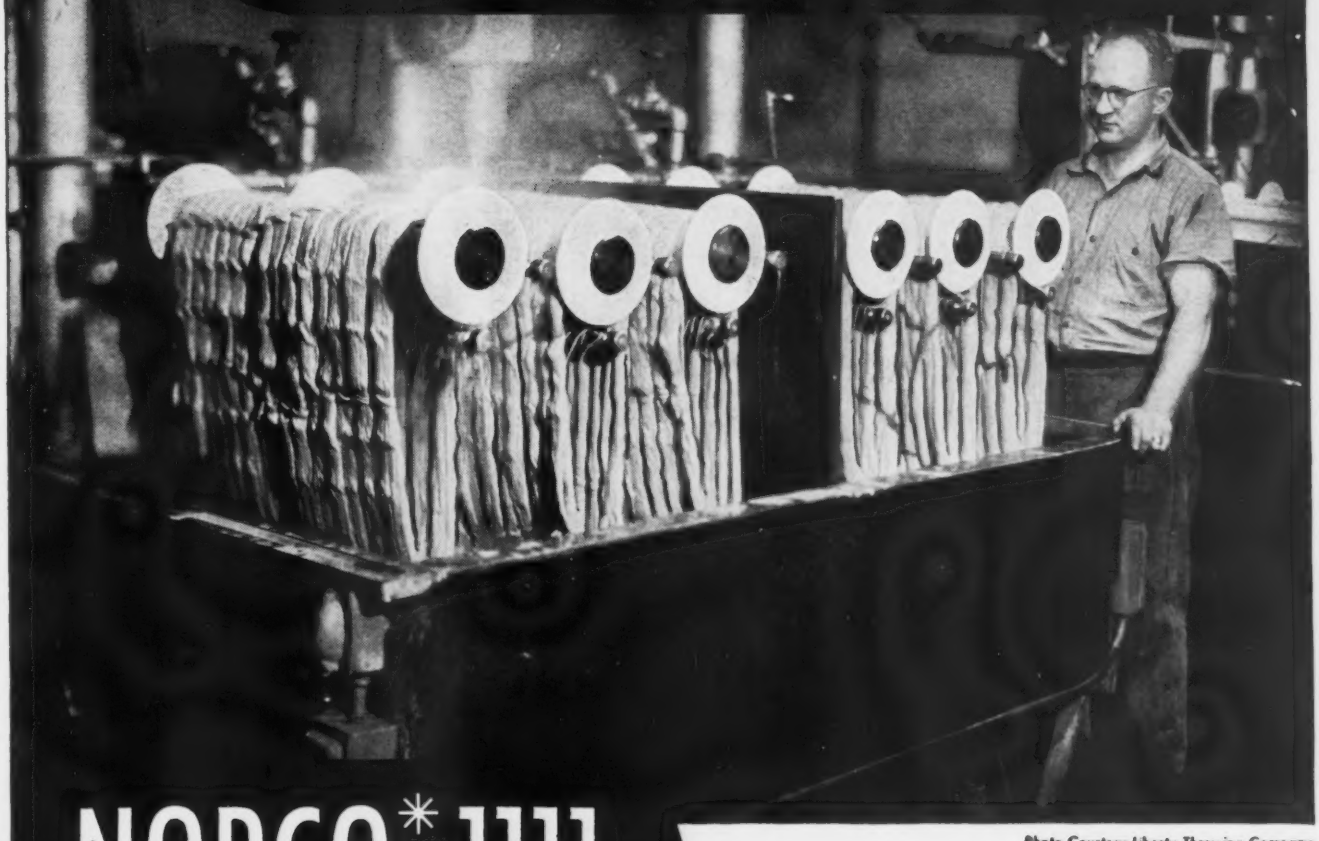


Photo Courtesy Liberty Throwing Company

NOPCO* 1111

PREMIER CREPE SOAKING OIL AND WARP SIZE SOFTENER

The rayon industry—one of the *most modern* of industries — turns naturally to *modern* machines, *modern* methods and *modern* processing materials to help increase volume, enhance quality and lower production costs — turns also to NOPCO 1111, acknowledged Standard of the Industry. Why?

Because today NOPCO 1111 means—as it has meant for more than a quarter of a century—many unique advantages for the Rayon Throwsters and Weavers throughout the world.

IT MEANS . . . unsurpassed softness and lubricity, higher winding efficiency, reduced ends down, fewer knots in yarn, more nearly perfect finished goods . . . controlled pebble . . . easy removal during boil-off . . . no volatilization in drying . . . complete freedom from oxidation and rancidity . . . plus other advantages that make NOPCO 1111—now as *always*—the premier product of its kind.

Read the two booklets widely accepted by the Rayon Industry for basic facts—"Important Points Regarding Rayon Warp Sizing" and "NOPCO 1111—Soaking Oil for Rayon Crepe Yarns". These valuable NOPCO booklets are available upon request.

NOPCO CHEMICAL COMPANY, Harrison, N.J.

Formerly National Oil Products Company

Branches: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CALIF.

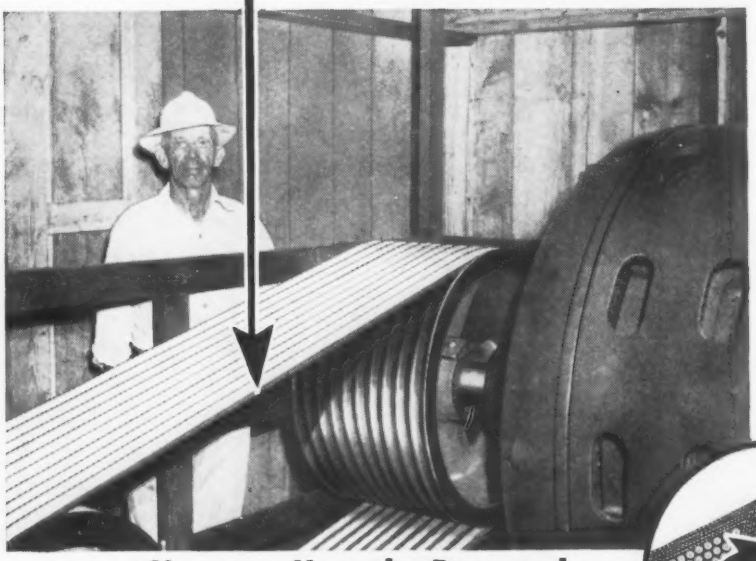
*REG. U.S. PAT. OFF.

NOPCO EVOLVED THROUGH RESEARCH

The SIDES of a V-Belt . . .

Diagram of V-Belt in Sheave Groove

Really DRIVE the Pulley
They PICK UP and DELIVER the POWER!
Naturally They GET the WEAR



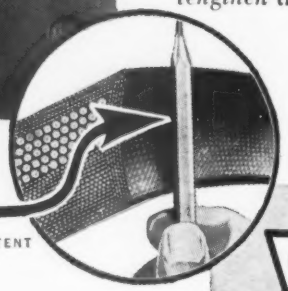
Anyone experienced with V-Belt drives knows that the *sides* of a V-Belt are what really get the wear.

It's the *sides* that grip the pulley. They pick up all the power from the driver pulley, transmit that power to the belt as a whole and then, once more, deliver the power to the driven pulley. Moreover, it's the sides that take all the wear against the sheave-groove wall.

That is why you have always noticed that the *sidewall* of a V-Belt is the part that *wears out first*—and, naturally, if you prolong the life of the sidewall, you *lengthen* the *life* of the *belt!*

Now see How the Patented Concave Side

A GATES PATENT



SAVES Sidewall Wear ...Lengthens Belt Life

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. The diagrams show also why the Patented Concave Side greatly *lengthens the life* of the *sidewalls* of Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belt can possibly give.

Saving SIDEWALL WEAR is more important NOW than ever before.

Now that Gates *SPECIALIZED* Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—fully 40% higher horsepower ratings—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important now than ever before!

Fig. 1

Straight Sided V-Belt

Fig. 1-A

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Fig. 2

Gates V-Belt with Patented Concave Sidewall

Fig. 2-A

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley.

No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

THE GATES RUBBER COMPANY *"The World's Largest Makers of V-Belts"* DENVER, U.S.A.

484

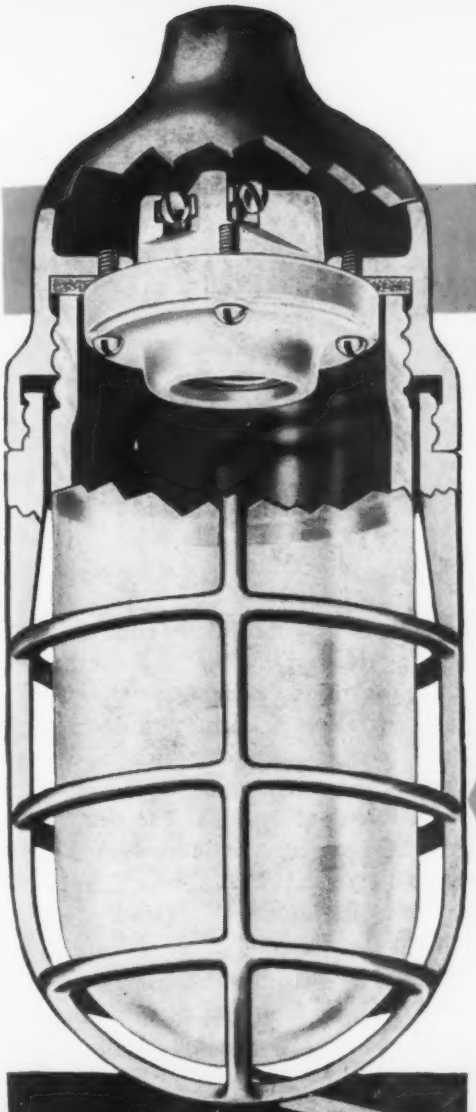
Gates

The Mark of SPECIALIZED Research

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

Vaportight
Industrial Lighting
CONDULET*



For use in boiler rooms, powerhouses, shower rooms, tunnels, loading docks, building entrances, and all indoor and outdoor locations where exposed to moisture and rain, non-explosive vapors and gases, or non-combustible dusts.

Vaportight and raintight.

Wiring chamber remains vaportight even though globe is off.

Porcelain Receptacle.

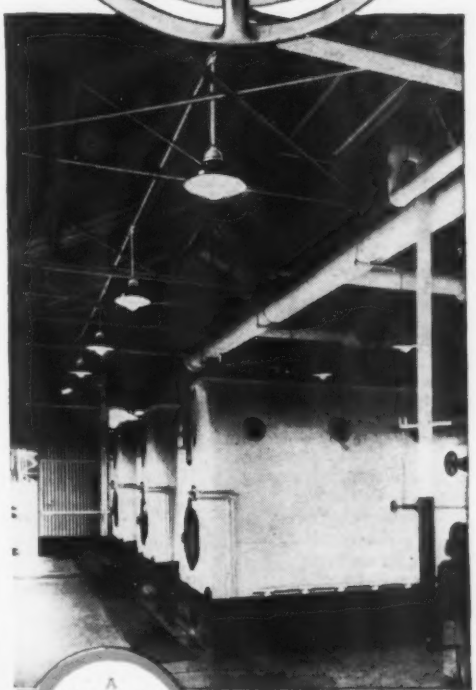
Screw guard or clamp guard.

11 Hub arrangements.

4 Reflector styles.

Accessories: Colored globes, pear-shaped globes and guards, half shades, and adapters.

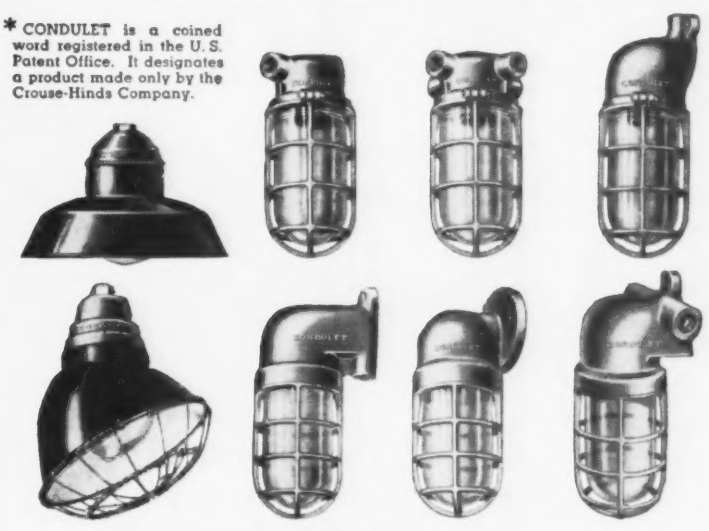
4 Sizes: 50 through 500-Watt.



Vaportight lighting fixtures are available for attaching to several round-base Condulets and sheet steel outlet boxes. Crouse-Hinds complete *Vaportight* line includes hand lamps, switches, plug receptacles, and other electrical devices.

Complete listings in Section 25, Condulet Catalog 2500.

* CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.



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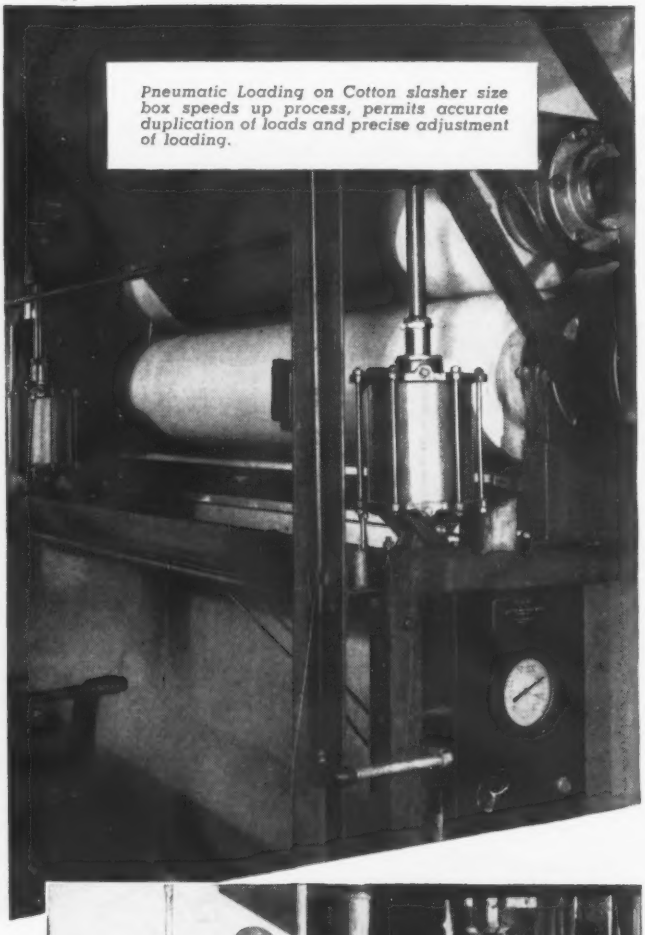
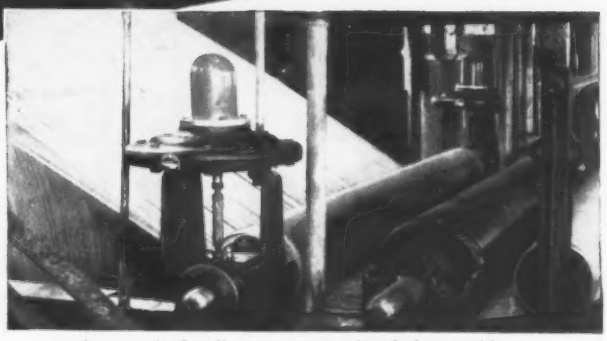
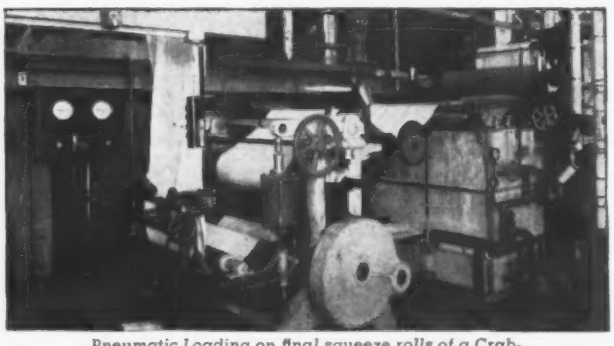


Pneumatic Loading on Cotton slasher size box speeds up process, permits accurate duplication of loads and precise adjustment of loading.



Pneumatic Loading on conventional dye padder (cotton) improves uniformity of shade, cuts waste in materials and steam.



Pneumatic Loading on final squeeze rolls of a Crabbing Machine permits quicker, closer setting of cloth, plus attractive fuel savings.

Get all the mill-wide advantages of FOXBORO pneumatic loading

This Unique System of automatically controlling roll pressure has many mill applications . . . and the more widely it is used, the greater its accumulative results. Its outstanding advantage is in maintaining uniform calibrated pressure at each end of the roll. The air-cushioned pressure prevents damage to roll covering, and there's no bouncing of the rolls. The operation is automatic—continuous. Other advantages are typical to the process on which pneumatic loading is used —maximum extraction, higher roll speeds, freedom from crushing, etc.

Hundreds of mills have installed Foxboro Pneumatic Loading . . . and more and more of them are making additional installations. They've found this system not only efficient and effective in improving product quality and uniformity but also extremely simple to operate and to maintain.

Why not check to see if you are getting all the mill-wide advantages of pneumatic loading? Use the list below as your guide. Then let's discuss the possibilities of multiplying the advantages of pneumatic loading in your mill. Write for complete information. **The Foxboro Company, 84 Neponset Ave., Foxboro, Massachusetts, U. S. A.**

• • •

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- Resin Finish Extractors
- Chlorine Shrinkproofing Extractors
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- Water Mangles
- Wet-out Box Extractors
- Printing Rolls
- Embossing Rolls
- Backwashing Extractors
- Calenders

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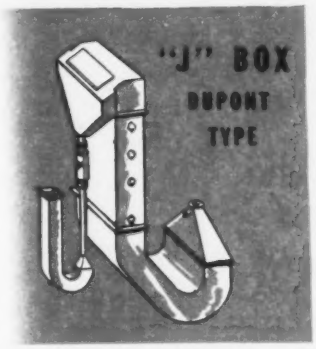

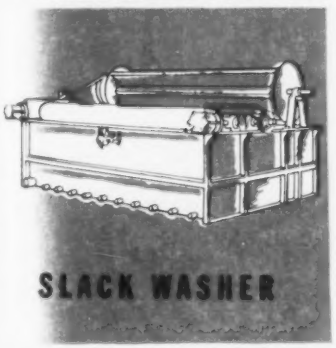

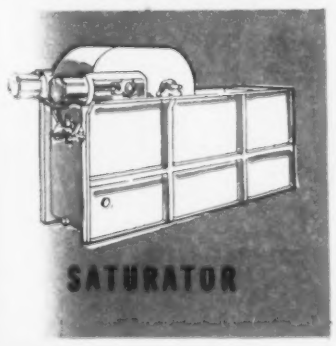

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Our engineers have worked hand-in-hand with textile men and will welcome an opportunity to talk with you. The size and capacity of your plant are no limitations. Hear the exclusive Wiesner-Rapp story first hand from our engineers by calling them in today to tell you how you can be ahead...stay ahead with

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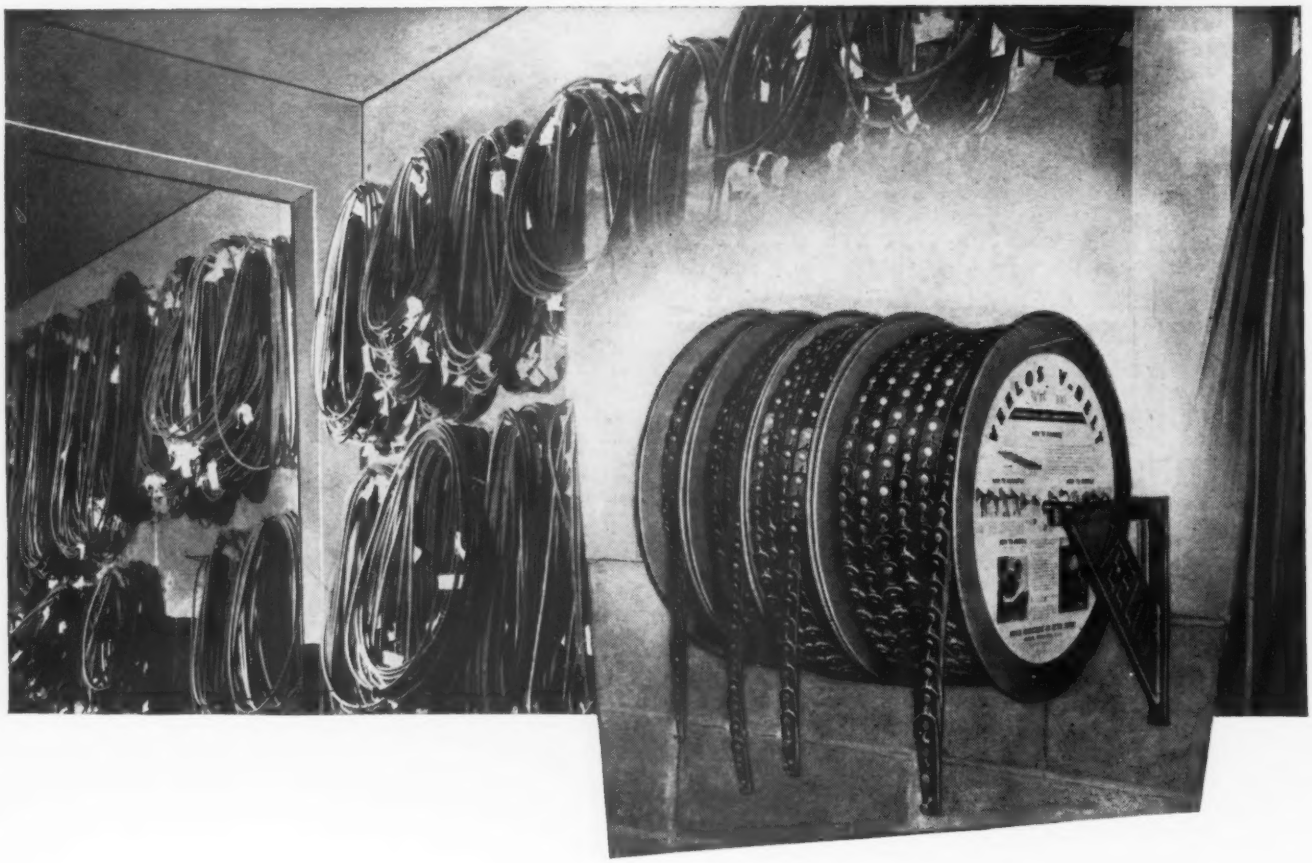

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From only four reels of Veelos—the link V-belt—you can make up as many as 316 standard sizes of industrial and fractional endless V-belts. There's no need to stock spare sets of endless belts for each drive.

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THIS NEW VEELOS CATALOG is jam-packed with benefits for you. Plenty of pictures show how Veelos is the link to power transmission efficiency in industry after industry. All the facts and full engineering data are given. Your copy sent on request.

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Standard Durene is the favorite of nationally known knit goods manufacturers who prize their reputation for quality. Over seventy years' experience, supplemented by our constant research, goes into the manufacture of Standard Durene. It is carefully processed in our own plants under our complete control from selected quality cotton to the finished yarn. Specify Standard Durene and be sure of that quality look.

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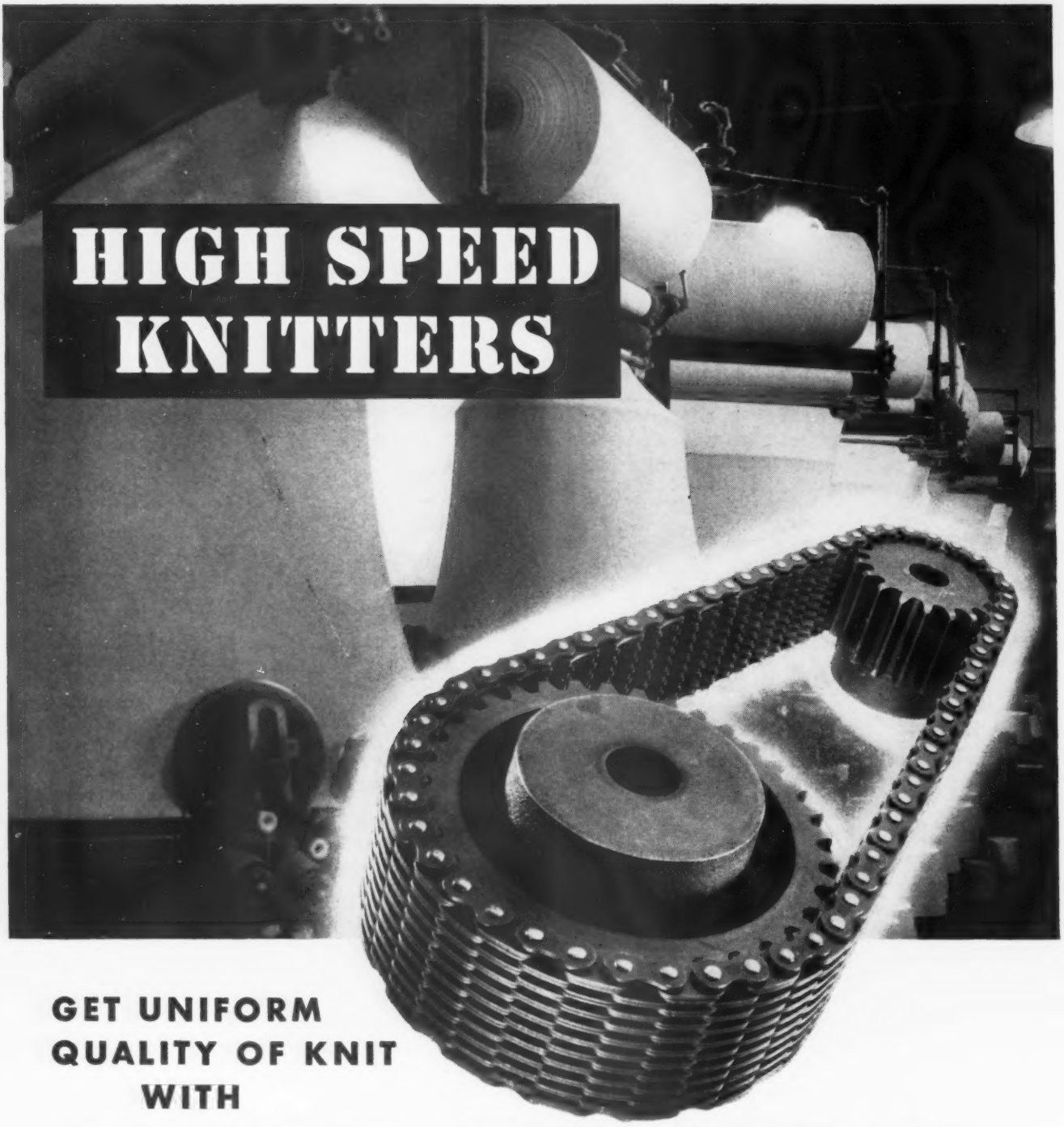

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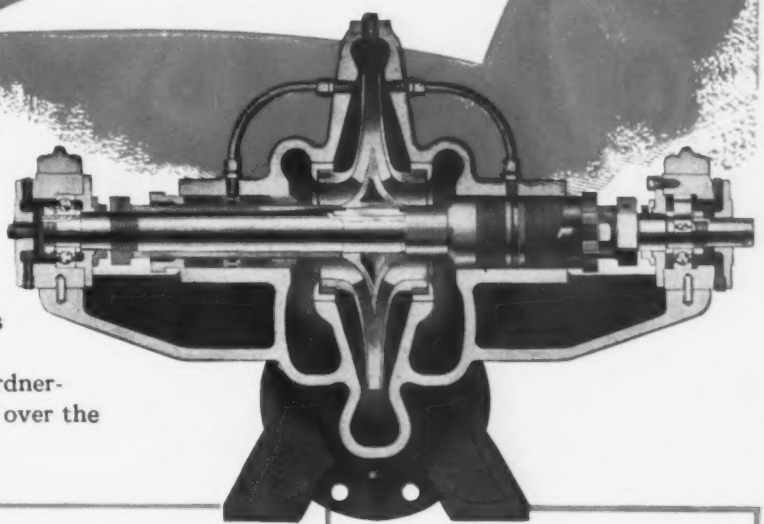
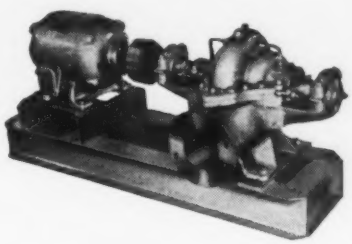
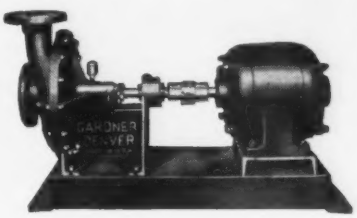
YOU can't judge a centrifugal pump from the *outside*. It's the inside that makes or mars the pump's efficiency. Inside, Gardner-Denver pumps are hydraulically and mechanically right. Foundry practices are rigidly controlled to form extremely smooth castings. Correctly proportioned water passages produce a uniform flow of water by eliminating eddies, backwaters and sudden changes in velocity.

Check over your pumps, then call a Gardner-Denver sales engineer—at your service all over the world—to help plan the correct pumping installation for you.

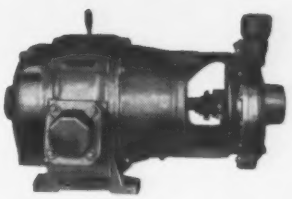




Gardner-Denver Horizontally Split-Case Double-Suction Centrifugals for large capacities. Available in sizes for all heads up to 300 feet.



Gardner-Denver Side-Suction Centrifugals for general utility service. Made in capacities up to 1600 gallons per minute at heads up to 100 ft.



Gardner-Denver Close-Coupled Centrifugals function in any position. Capacities up to 1250 gallons per minute at heads up to 250 ft.

For complete information, write Gardner-Denver Company, Quincy, Illinois

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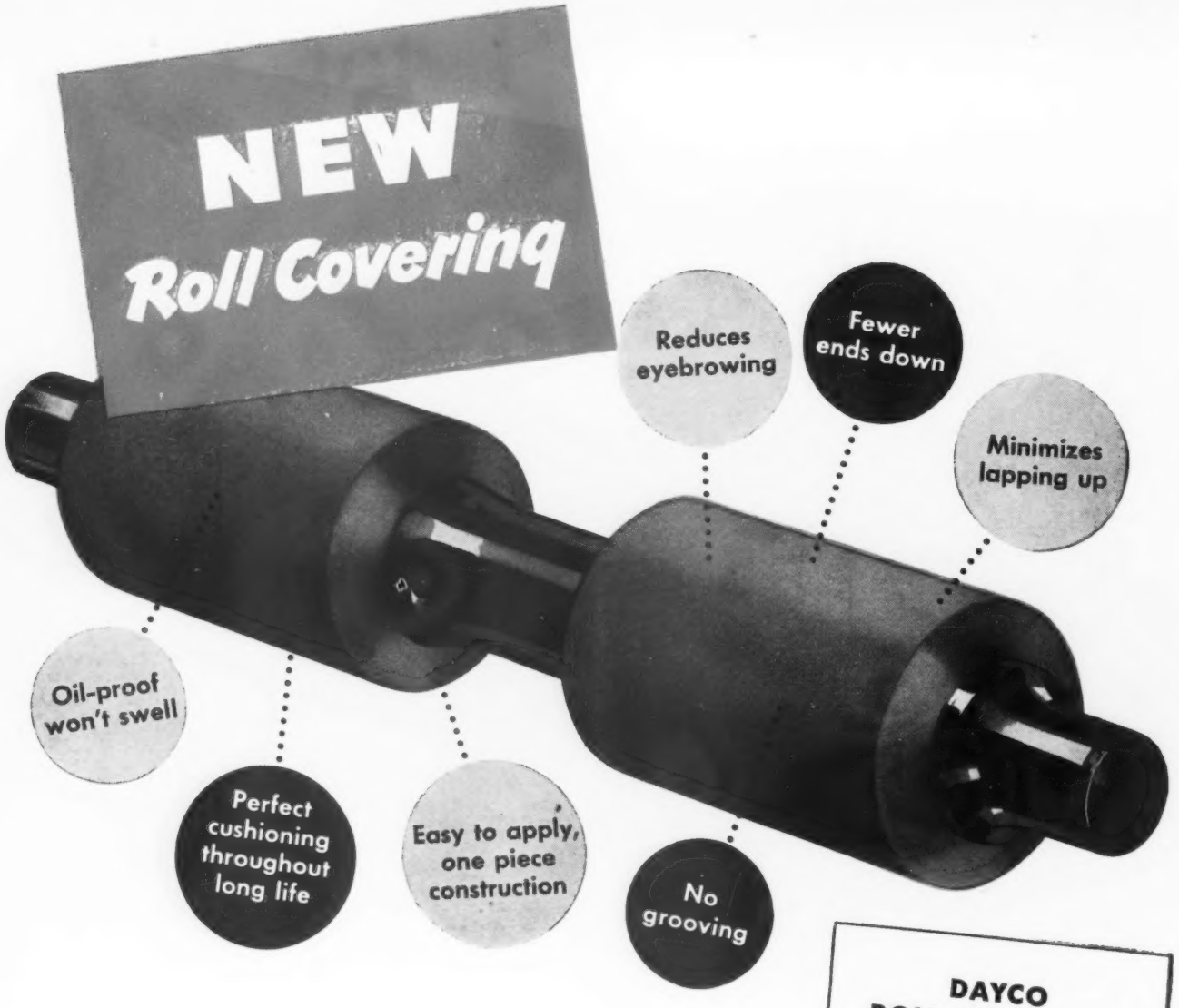

Specially designed for running synthetic and natural fibers, the new red Dayco Type "SE" Roll Covering processes synthetics with greater uniformity, with less lapping up and practically no ends down. Not affected by heat or humidity, The Dayco Type "SE" Roll Covering will give the same uniform service throughout its extremely long life. Remember, whether you're running cotton, wool or synthetics there's a mill-proved Dayco especially engineered for your frames. For complete information write Dayton Rubber, Dayton, Ohio, or *Textile Division—Main Sales Office, Woodside Bldg., Greenville, South Carolina.*

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Whether your frames are equipped with flat or revolving clearers, there is a specially engineered Dayco for maximum results.

TYPE "C" for revolving clearers. Precise, accurate accounting records show the cost per hour of operation is less—with Daycos.

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Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Why You Cannot Get Ahead As Your Father Did —

THE UNITED STATES is being forced toward socialism by a tax revolution of far-reaching consequences.

We have not yet felt fully the deadly impact of this revolution because inflation and the postwar boom have delayed its effects.

But from now on, more and more people will feel its bite. Already it is the dominant element in our economic life. Already it is the major factor in our chances of keeping our jobs and of getting ahead.

Here are some pertinent facts on this tax revolution:

1. The tax load that our nation can safely carry has long since passed the danger point.

Our capitalistic system is in real danger when taxes take more than 20 percent of our national income (or 20¢ out of every income dollar). Beyond that point there are not sufficient dollars left in private hands for capitalistic America to raise the capital required to keep its industry going. So we are right now being nudged further and further into socialism.

For today taxes take *twenty-five* percent of national income (or 25¢ out of every income dollar).

2. The tax revolution has undercut the incentives that help us to get ahead.

The group whose incomes range from $5000 up now turns over about one-half of its *total* income to federal, state, and local tax collectors. Before the war, this group gave the tax collectors one-third of its collective income.

In sharp contrast, the group of people with incomes under $5000 pays the tax collectors 20% of its income for direct and hidden (mostly hidden) taxes — against 18% before the war. This lower-bracket group needs immediate tax relief but I believe most sincerely that persons earning less than $5,000 have a very vital reason for also supporting tax relief in the much more heavily hit upper brackets.

As you get ahead, you expect your taxes to go up. Taxes should be levied, in principle, according to ability to pay. But today tax rates rise so sharply that they virtually destroy all incentives to get ahead, to save, and to invest in new and untried enterprises that open up new jobs. *The progressive tax idea now carried to punitive extremes has become a destructive tax revolution.*

Today the U.S., envied by all the world for the wealth it has won under capitalistic incentives, has cut its incentives below those offered by that state whose police methods strike terror into the hearts of all workers.

Soviet Russia rewards successful managers, writers, and scientists better relatively than we do under our present tax system.

A revolution that sweeps away incentives will quickly sweep away our free enterprise economy. The only substitute ever found for free incentives is the whip-and-lash compulsion of the police state. And no police state has ever been able to match the production of a free people with a free economy that gives adequate rewards to individual producers.

3. The tax revolution hits squarely the average American's chances of keeping a job and of getting ahead.

If you make less than $5000 a year you may well ask why you should worry about a tax revolution that seems directed at the comparatively small group, about 10% of American families, who make $5000 a year or more.

The answer, it seems to me, is that "risk capital," the money that makes new jobs when invested in growing companies or in new businesses, must come largely from the people making more than $5000 a year. The others usually cannot afford to take any risks with their savings.

It was the savings of this 10% group that made possible the huge growth in American industry and American jobs and our progress in raising American living standards in the years before 1930.

Now the government is taking so much from the 10% group in taxes that they cannot afford to risk any savings they manage to accumulate. Most of their savings now go to insurance companies and savings banks which are barred by law from making risky investments or investments even in seasoned common stocks.

The flow of risk-capital from this 10% group can only be renewed by reducing their taxes. The result will benefit everyone over the difficult years to come by providing more and steadier employment for all.

The cost of the presently proposed reduction, *less than 1% of the national income,* can well come out of current revenue surplus. It will be repaid many-fold by the new enterprises it will stimulate.

4. Jobs will be lost if risk-capital does not increase.

Unless the flow of risk-capital into business *can be doubled* and *trebled* in the next few years, business investment in job-making new plants and equipment will drop sharply. The McGraw-Hill survey of prospective capital expenditures, reported in the previous editorial in this series, made that quite clear.

When such a drop in business investment has come in the past, it has brought with it a general slump in business – and unemployment.

As we work through the enormous demand for goods of all kinds built up during the war years, and as the war-accumulated savings of businesses and individuals are spent, it will be harder and harder to keep production and employment at today's high levels.

Then—at the very time that we shall need all our drive to maintain prosperity—we shall be hit by the full impact of the tax revolution.

5. Compounding these troubles is a tax system as out-of-date as an oxcart.

Twenty years ago, when taxes took only twelve cents out of the national income dollar, our rattle-trap tax system was little more than a nuisance. Today, when it takes twice as big a bite, its double-taxing of the earnings of investors, its discriminatory excises, and the overlapping of federal, state, and local levies are a fatal handicap. A new system, a fair system, a rewarding system, is a necessity if American initiative and enterprise are to have a fair chance.

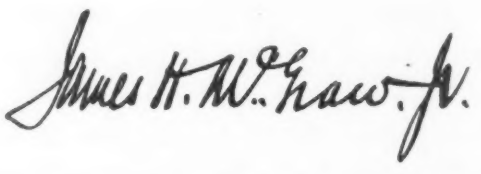
What Congress does now about federal taxes will bear crucially on our ability to sustain prosperity.

By demanding economy in government and by re-designing the tax system to stimulate initiative and risk-taking, Congress can multiply many times our chances of maintaining full employment and of raising living standards.

By allowing people to save more and by renewing the incentive to risk capital in new enterprises, Congress can actually insure a bigger tax return in the years ahead. More business will result – and pay more taxes.

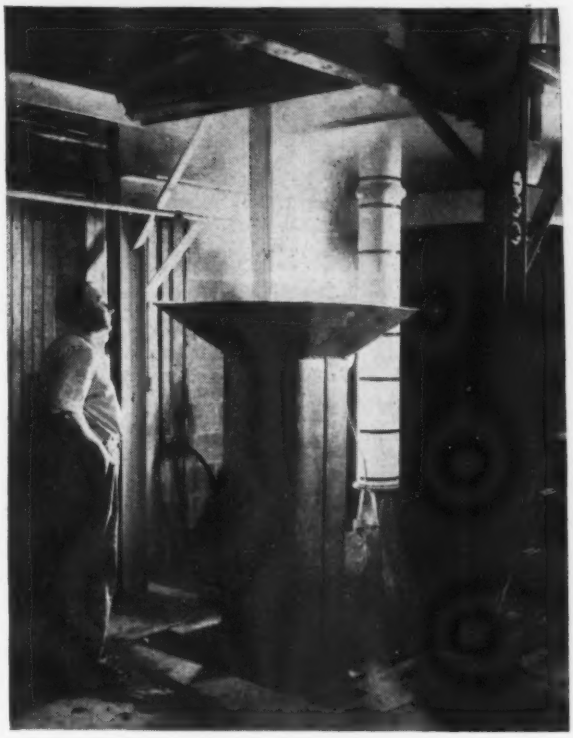
That is the only way that a free people with a free economy can carry the tax load.

That is the best way that our government can improve our chances of keeping our jobs and of getting ahead. I suggest that you discuss these vital matters with your chosen representatives in Congress, in your state government, in your local community.



President, McGraw-Hill Publishing Company, Inc.

THIS IS THE 66TH OF THE SERIES



OUR COVER — Tubular-knit fabric passing through a continuous-bleaching range is watched by Norman High, bleachery foreman, at Spring City Bleach & Dye Works, Spring City, Pa. Knit goods were bleached continuously for the first time in this range. The fabric is shown entering a small J-box which precedes a single-leg heater tube and large J-box.

HIGHLIGHTS: Recent and pending developments may vastly change processing methods — Finishers harassed by some problems, but are happy — Materials shortages causing some difficulties — Possibilities of range processing and relaxation-shrinkage machine being watched closely.

Progress and Prosperity Keynote KNIT-GOODS FINISHING

By WILLIAM A. NEWELL
Assistant Editor, TEXTILE WORLD

PROGRESS AND PROSPERITY strike the keynote of current operations in knit-goods finishing. The adaptation of continuous-processing methods and the development of equipment and processes that will benefit both mill and consumer mark the outstanding recent technological advances. Despite some harassment from materials shortages, knit-goods finishers are operating at capacity and seem to be prosperously happy.

Most finishers are conscious of the possible far-reaching effects of recent developments in processing and equipment. Most mills are considering a continuous-processing range in their near or long-range planning. Far-seeing plants are planning layouts around the continuous range to handle fabric as continuously as possible in processes prior to and following the bleaching range. Materials-handling equipment figures in many plans.

PROGRESS. Installation of a continuous bleaching range at Spring City Bleach & Dye Works, Spring City, Pa. [TW, Dec. '47, p 108] marked the first adaptation to knit-goods finishing of high speed, continuous methods which had been up to that time confined to woven piece-goods processing. At the present time, many types of knit goods previously bleached in kiers or over reels can now be continuously bleached. There is much promise that this type of processing will soon be adapted to include many more types of knit fabrics, and continuous dyeing is looked for in the not-so-distant future.

The continuous knit-goods bleaching range designed by Du Pont and installed at Spring City Bleach & Dye Works delivers a product of a quality comparable to the kier-bleaching method, and at less cost, at 160 yd. per min. H. W. Butterworth & Sons Co. of Philadelphia, Pa., have developed a Du Pont-type knit-goods bleaching range complete in 44 ft. of floor space. The units contained are three slack

washers for wetting-out and impregnating with caustic or peroxide, a steaming tube and J-box, followed by a rinse in two slack washers and a final squeeze. Some mill installations of this new range are now being planned.

The Redman machine for relaxation shrinkage of knit goods in a production-size unit built by Proctor & Schwartz is undergoing trials at Spring City Bleach & Dye Works, and preliminary reports are highly praiseworthy. Intense interest in the Redman process for relaxation shrinkage of knit goods centers about two points: (1) the possibility that the machine might have a profound effect on drying of knit goods by combining shrinkage and drying into a single process, and (2) the effect of the preshrinking on underwear and similar goods as they are sold to the consumer.

Interest in the latter point seems to be a result of the pangs of conscience finishers are suffering as a result of cutter's demands. As one commission finisher put it, "We can finish a fabric from a 24-in. head in any width from 20 to 32 in., and it's our business to do so; but we can't help but feel sorry for the consumer who gets some of the overstretched fabrics."

The Redman machine is being calculated into future planning of mills, and finishers are anxious for further information on its capabilities and possibilities.

A unit especially developed for tricot-fabric drying, the suction-cylinder dryer, was announced by Proctor & Schwartz, Inc., Philadelphia. Fabric is fed to a rotary perforated cylinder through which air is drawn. Knitted fabric is held on the cylinder by another fabric running in endless-belt form.

Dyeing of vat colors on the open reel, originally developed with khaki fabric during the war, was being used by most dyers for fast dyeing in brilliant shades of green, golden yellow, tropical tan, etc.

A new development by Rodney Hunt Machine Co. applicable to washers and many other machines is said to process cloth continuously completely without tension regardless of shrinkage or stretch or rate thereof, and without any change in speed of any part of the machine. This will doubtless find application in knit-goods finishing. This development will be described in a future issue of TEXTILE WORLD.

Most dryers and finishers seem happy with their equipment, especially that made of stainless steel. Hesitancy on new machinery orders was expressed by some until more definite information on capabilities of range-processing and the Redman machine were forthcoming. One finisher, who feels that room-dried fabrics are superior to machine-dried, expressed the need for "someone to invent a machine to hang cloth for drying in drying rooms," currently an expensive hand operation.

PROSPERITY. Most knit-goods finishing plants are busy and prosperous. While some finishers feel that their higher break-even points require near-capacity operation, none seem to be worried about the immediate future. The inflated price of fabrics and the recent commodity market shakeup are being felt in placement of finishing orders for processing as late as possible before the coming season, followed by demands on finishers for rapid deliveries.

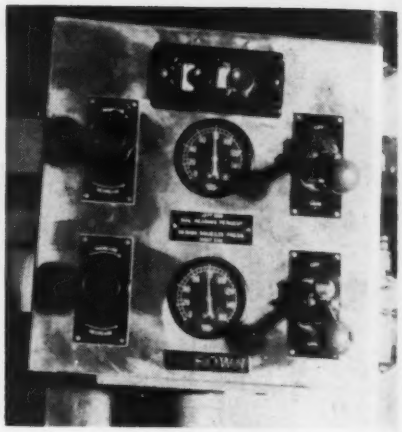
The shortage of dyes and beta-naphthol is the greatest current complaint of knit-goods dyers and finishers. Beta-naphthol, normally a 30¢-a-lb. product, is reported to be selling on the black market for $1.40. U. S.-made caustic soda, which normally sells for 3 to 3½¢ a lb., is said to be purchasable in Mexico for 35¢. To this the harassed dyer adds, "It seems that because of the beta-naphthol shortage, everyone wants developed dyes!" Peroxide seems to offer no difficulties of availability so long as mills anticipate needs carefully.

A good dye for nylon is still claimed as needed by hosiery finishers, and many specially formulated dyes to fill this need have been placed on the market recently.

Some mills are bothered by a shortage of experienced help, others are worried about the possibility of a prolonged coal strike this spring. All who buy and knit their own yarn need quality yarns at a reasonable price. Repair parts for some equipment are being delayed, deliveries on some new machines are months behind promises, and used machinery is more expensive, frequently, than new.

Finishers in Pennsylvania are somewhat concerned about waste-treatment laws recently passed by the state. Most expressed an ignorance of how to handle the disposal and purification and were concerned about spending the money from which there would be no return. At the same time they are working against a time limit on their installations.

Despite their many problems, knit-goods finishers are looking forward to continued busy operations. Current developments are being watched carefuly and with some pride, and many finishers are looking forward to future incorporation of these developments into their plants, their processing, and their products.

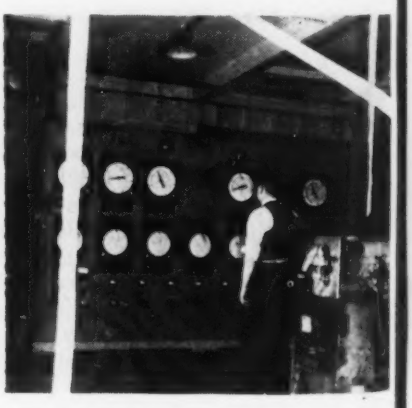


A pedestal control station near the first slack-loop washer governs squeeze-roll pressures. The top pushbuttons are a safety lock to prevent operation of the range while it is being worked on.

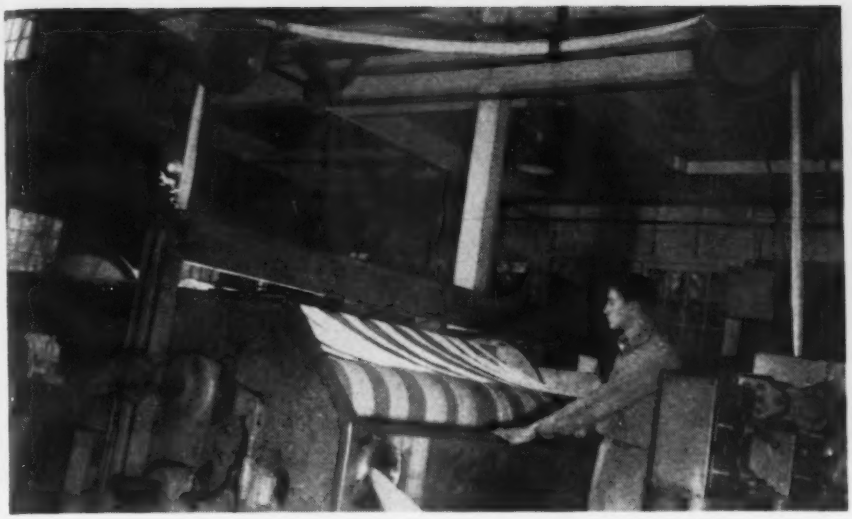
HIGHLIGHTS: South's first continuous-bleaching range for knit goods installed at Fortune Bleach & Dye Works—Goods from 1 to 9 yd. per lb. can be handled—Speed on 4 oz. fabric is 150 yd. per min.—Comparison with kier method shows saving of 16 to 23 hr. in bleaching 30,000 yd.

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

KNIT-GOODS FINISHING
ANNUAL KNITTING SECTION



A central panel controls and records temperatures, pressures, speeds.



Holes are staggered in the compartment walls of this 3-ton slack-loop washer being operated by Pat Livingston to insure passage of cloth through cleanest water.

Goods passing to the heater tube and J-box are inspected by Murray S. Dayan, president, and Henry Kass, secretary-treasurer of Fortune firm.

Knit Goods Bleached in CONTINUOUS RANGE

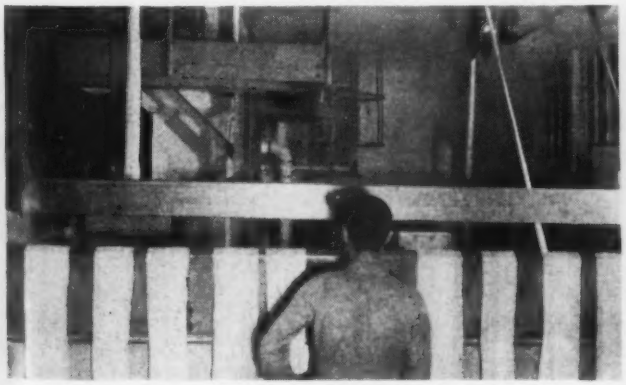
THE SOUTH'S FIRST continuous-bleaching range for knit goods began operation Mar. 2 at Fortune Bleach & Dye Works, Lumberton, N. C. The range is made up of high-speed, all-stainless-steel equipment that has a production potential of 1,000,000 yd. per week based on a two-shift operation. Construction of this range was the culmination of a 5-yr. plan by Murray S. Dayan, president, for locating and equipping a large knit-goods bleachery for southern knitters who heretofore have sent most of their goods to northern mills for finishing.

The mill expects to follow the procedures established by the engineers of the new, high-speed range. Exact determination of some technical details must be left to experience, but in general the mill expects to operate at speeds between 75 and 150 yd. per min. The ultimate speed depends upon the weight and type of fabrics to be processed.

Experience with jersey-knit, 4-yd. fabric indicates that the optimum speed of 150 yd. per min. will be reached satisfactorily on that particular style of goods. Some fabrics may also be run double through the range, thus doubling the yards produced per minute.

The Du Pont-developed continuous-bleaching range processes a variety of fabrics from plain jersey to tricot material. The fabric-weight capacity is said to range from approximately 1 to 9 yd. per lb. The heavier the fabric, the slower the range must operate in order to bleach the denser, heavier material.

COST IS REDUCED. Based upon the tentative speed of 150 yd. per min. for 4-yd. goods, the continuous knit-goods range is said to have a production capacity equivalent of four or five conventional kiers. The following comparative production summary was prepared from kier experience in other



Cloth emerges from the second washer under the direction of Buddy Pridgen, operator.

These individual motors drive the rope squeezer and the second washer.

mills and from tentative and expected experience with the continuous range on 4-yd. knitted fabric.

Kier time chart (30,000 yd. capacity)

1. Load kier	2 to 3 hr.
2. Boil out	6 to 8 hr.
3. Wash down.	1 to 2 hr.
4. Bleach	8 to 10 hr.
5. Unload kier	2 to 3 hr.
Total	19 to 26 hr.

Continuous-range time (150 yd. per min. processing single goods)

1. 150 yd. per min × 60 min. = 9,000 yd. per hr.
2. 30,000 yd. divided by 9,000 yd. = 3.33 hr. required.
3. Range therefore processes the 30,000 yd. in 3.33 hr., as opposed to conventional kier time of 19 to 26 hr.

STAINLESS-STEEL EQUIPMENT. Fortune's stainless-steel equipment was built and installed by Greenville Steel and Foundry Co., Greenville, S. C. The bleaching range is a one-stage range, although it is divided into two sections which can be controlled separately or as a unit. Movement of the cloth is continuous and uninterrupted except for 1 hr. of storage in the J-box. Since the 1 hr. of processing (or 9,000 yd. of 4-yd. goods at 150 yd. per min.) is built up ahead of time in the storage chamber of the J-box, there is no halt in the discharge of bleached cloth from the finisher saturator which produces constantly at the predetermined speed.

The range consists of a slack-loop washer, a rope squeezer, a caustic-peroxide saturator, J-box, another slack-loop washer, a rope squeezer, and a finisher saturator. The 3-ton slack-loop washer has 12 compartments, the first six of which contain hot water, and the last six cold water. Three tons of pressure are exerted by the pneumatically actuated rubber top squeeze roll. The pressure on each end of the roll can be varied and is fully controllable in order to maintain proper running tension on the knit goods. Fabric passes through each of the stainless-steel compartments and gets 12 squeezes or extractions during the washing. Holes through compartment walls are staggered upwards from left to right so that cloth passes through the lower or oldest part of the water first and through the newest or cleanest water last.

Proper heating of the cloth is obtained by the heater tube and heat-distribution system on the J-box. By means of an unusual arrangement of Brown thermocouple tip gages, the actual temperature of the cloth can be measured in several different locations on the J-box. Temperature range of the J-box cloth is from 200 to 205° F.

CONTROLS. In order to operate the continuous range, precise control was effected over speed, temperature, steam flow, and a variety of other factors. The control panels were assembled and installed by Brown Instrument Co.

One difficult factor of knit-goods control is the tension that develops in knitted fabric under stress. It is a far greater problem than that of woven cloth. Fortune's power, equipment, and controls are so applied that the tension on knit goods is reduced to a minimum.

Precise control of washing is maintained by a pedestal control station at the first slack-loop washer. Two controls at the top of the panel, a knob and a lever, govern the left-hand end of the squeeze roll. By turning the knob to the right, the operator increases the amount of pressure upon the left-hand end of the roll. Pressure of the left-hand end of the roll is indicated by an oval gage at the top center of the panel. Pressure is shown by percentages. With the indicator at 80, the dial indicates that 80% of the pressure (or 80% of 3 tons) is being exerted upon the roll for extraction of the goods. The lever moves upward to lift the left-hand end of the top squeeze roll.

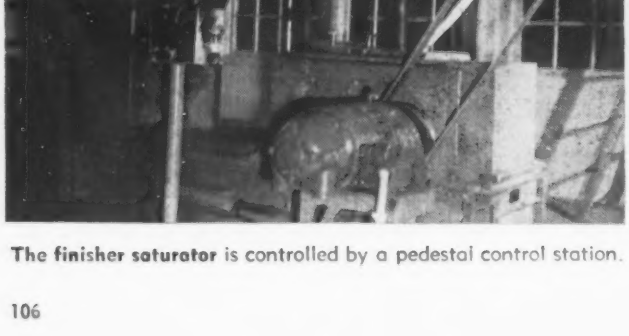
Similarly, a threesome of knob, indicator, and lever at the bottom of the panel are controls for the pressure upon the right-hand end of the top squeeze roll. With tension on knit goods a critical factor of its running quality, this separate control of pressure is important so that the best running conditions can be obtained.

A pushbutton start-and-stop control at the top of the panel has a unique safety lock. When the operator stops machine to untangle a snarl or to do any work upon the moving parts, he locks this switch; and by so doing not only locks the washer but also locks the entire range so that there is no possibility of someone starting the machine up while the first workman is in a dangerous or exposed position. A strict rule of the company forbids anyone to start the machine when the safety lock is on except the person who engaged the safety lock.

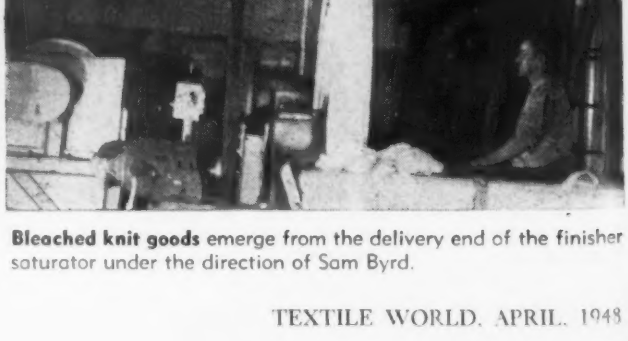
A central control panel indicates and governs temperatures, pressures, speeds. Manual bypass panels permit the mill to switch from automatic to manual controls when desired, as in starting up and attaining full speed.

OTHER EQUIPMENT. In dry-finishing departments, Fortune has installed National Dryer Co. equipment. The mill has also installed an unusual dyeing range which—like the bleaching range—is continuous, high-speed, and elaborately controlled. The dyeing equipment consists of dye padder, booster (washer and fixer), followed by whatever equipment is required in the finish.

A "Lightning" mixer is used on the chemical storage and mixing tank. In this tank, the mill mixes bluing or weighting materials as required by the finish and hand of the goods. With the electric mixer, Fortune prepares in 30 min. enough of these materials for a 24-hr. run.



The finisher saturator is controlled by a pedestal control station.



Bleached knit goods emerge from the delivery end of the finisher saturator under the direction of Sam Byrd.

Weighing dyestuffs (left) requires sensitive scales and skillful manipulation. The amount of dyestuffs used in each run is relatively small, and a slight error in weighing can easily produce a run of hose dyed an off-shade pastel. **Matching of colors** (center) is done at Vanette only by daylight. **Finishing the hosiery** (right) is done with the bath at 110° F. At intervals, a dulling agent, a snagproofing agent, and a softener are added to the bath. Temperatures are closely controlled.

PASTEL HOSE SHADES

Test Dyers' Techniques

HIGHLIGHTS: Dyeing 10- and 15-den. nylon hose in new pastel shades requires sensitive control of water, time, and temperature—Combined multifilament and monofilament yarns intensify problems of leveling and penetrating—Vanette Hosiery Mills, Dallas, Tex., follows strict routine in preparation, dyeing, and finishing of hosiery.

KNIT-GOODS FINISHING
ANNUAL KNITTING SECTION

By HOWARD PLUMLEE
Head Dyer, Vanette Hosiery Mills

THE USE OF multifilament nylon in conjunction with monofilament in full-fashioned hosiery presents a difficult problem to the dyer. The dyeing characteristics of multi- and monofilament yarns are so different that careful manipulation must be followed in order to obtain a good union of the two. The contrast between the dyed yarns is particularly marked in 10- and 15-den. nylon dyed in the new pastel shades.

One fact that aggravates the problem is the necessity for eliminating the possibility of contact dermatitis. Many wearers of hose are sensitive to contact with the most common dye materials, and care must be observed in removing all loose materials that might lead to skin irritation. Adequate scouring with soft water is therefore a prime essential.

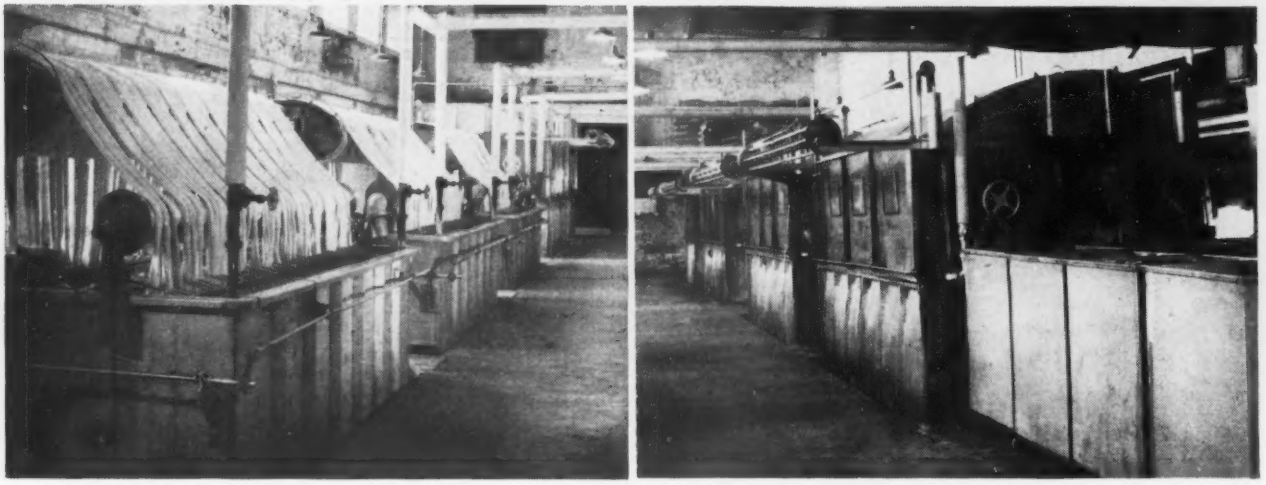
Many dychouse troubles develop as a result of local water conditions over which the hosiery mill has no control at the source. Hard water, of course, cannot be used either for scouring or dyeing; and it is necessary for the mill to condition its water carefully before it is used. It has been found at Vanette Hosiery Mills, Dallas, Tex., that water in that locality can be conditioned satisfactorily with a Zeolite softener, regenerated each time it passes the amount of water it was designed to treat.

TIME AND TEMPERATURE. Given an adequate supply of good processing water, the next most important considerations are effective controls of time and temperature. The same is true of dyeing in general; but the relative importance of controls is probably greater in the case of fine-denier-nylon hosiery in pastel shades than in dyeing many other types of goods.

Automatic controls for time and

Time and Temperature Data

Bath	Temperature (°F)	Time (min.)
Scouring	160	30
1st rinse	150	—
2nd rinse	150	—
Leveling and penetrating	100	10
Dyeing	100	10
	100-150 (gradual)	15
	150	30
1st rinse	150	—
2nd rinse	150	—
3rd rinse	150	—
Finishing		
Duller	110	5
Snagproofing	110	15
Softener	110	5



Continuous bleaching and dyeing of knit goods is carried out on open-reel machines at Alamac Knitting Mills.

Combined Skills Produce Quality
KNIT-GOODS FINISHING

HIGHLIGHTS: **Laboratory aids in producing uniform batches which receive various finishes after dyeing—Knit goods dyed continuously on open-reel machine—Mercerized yarns require special handling—Cooperation of knitter aids processing.**

By EARL S. DUNLAP, Ch. E.
Chief Chemist, Alamac Knitting Mills, Inc.

KNIT-GOODS FINISHING
ANNUAL KNITTING SECTION

A CONTROL LABORATORY and modern processing equipment are combined at Alamac Knitting Mills, Inc., Indian Orchard, Mass., to bleach and dye efficiently 60,000 lb. of knit fabric a week. Fabrics of cotton, viscose rayon, acetate rayon, and combinations of these are all included.

Laboratory equipment includes a Rodney Hunt sample dryer having a capacity of four sample swatches at a time and an Analyte matching lamp. Facilities are available for making sample dyeings as well as most of the fastness tests required in the trade. Trial dyeings are a great help in producing a new shade in view of the change in shade one can expect from various finishes that may be applied after dyeing. The dyer must have knowledge of what finish each fabric will be given subsequently in order to produce shades as nearly uniform as possible with previous batches of the same color. Control of the uniformity of the finish is just as important as a good, working dyeing formula.

In the laboratory, special attention is paid to the uniformity of the bleach bottom given to pastel shades before dyeing. Sometimes this bleach bottom may be obtained either in a one-batch operation while dyeing or in a

temperature are indispensable. Each dye machine should be equipped with a control instrument to bring the dye bath to the desired temperature and hold the temperature for the necessary length of time. Depth of shade and levelness of dyeing can be obtained only when these factors are closely controlled.

The procedure followed at Vanette is as follows:

The hosiery is scoured and prepared for dyeing. It is necessary that the emulsification value of the scour bath is sufficient to clean the hosiery. The yarn sizing in the hosiery consists of synthetic resin, throwster's tint, marking crayon, grease, oil, and soap. The size is hard to remove after the hose have been set with high preboarding temperatures; but unless the hose are thoroughly cleaned in the scour bath, unevenness of shade will result.

In preparing a scour bath at Vanette, the dye machine is filled with water at 160° F. The scouring agents that have been selected after considerable testing are dissolved and diluted in containers and added to the water in the dye machine. The goods are entered into the machine and run at 160° F. for 30 min. The bath is then flushed over and dropped. The hose are rinsed twice in the machine at 150° F.

DYE ASSISTANTS. Many agents are available for assisting the leveling and penetrating qualities of the dye. Exhaustive tests of available agents were made at Vanette to determine which agent or combination of agents gave the best results under the mill's particular conditions. Two agents were selected, largely because of their ca-

Stripes are kept in alignment by the vari-edge drive rolls on this Tube-Tex finisher.

Trial dyeings to ascertain effect of various finishes are carried out in this control laboratory.

separate operation. Whatever method is used, it is readily seen that a difference in the bleach bottom is equally as important as the dye formula itself. When the practical run is made in the dyetub, condensation from the open steam line must be taken into account so as not to disturb the concentration of the dyeing and bleaching bath.

INSPECTION. Prior to dyeing, all fabrics are inspected and unrolled into trucks specially prepared for transferring goods to the dyetubs. It is during this inspection that the amount of scouring needed properly to cleanse the fabric of oils and other impurities is determined.

Continuous dyeing of knit goods is being done on the open-reel machine with success. The dyeing has an advantage in that the pieces can be sewn together prior to dyeing rather than after, as required before running through the Tube-Tex units. However, the main advantage is that all the pieces go through the dye liquor at an even rate. The various lengths other wise would go through the dye liquor at different speeds thereby producing differences in the depths of color.

Great care is given to fabrics knitted with mercerized yarns. These yarns absorb the dyes more quickly and require a smaller percentage of dyestuff to obtain the same shade as that obtained on combed or carded cotton yarns which have not been mercerized. Separate dye formulas are therefore maintained. Tests have shown that certain dyes are totally unsuitable for use on mercerized yarns.

In these days of very high prices, when the customer is quite right in demanding quality, the finisher must be constantly on the alert. The cutter is today asking for fabric which will not curl when laid on the cutting table. This presents a problem which is being well taken care of by the Tube-Tex processing machine. A starch solution is applied to the fabric using this range. This finish need not necessarily give a stiff hand, but a sufficient body should be imparted to help the cutter control curl.

The alignment of the stripes presents another problem which is taken care of by both the Tube-Tex processor as well as the Tube-Tex finisher. Patented spreaders in conjunction with vari-speed edge-drive rolls, when properly operated, produce results which, we feel, have been unequalled for our particular needs.

With the same equipment, water-repellent finishes—either durable or non-durable—are applied, the former being in demand on knit goods during the past year.

The task of the knit-goods dyer and finisher can be eased by careful production techniques in the knitting department. More often than not, it is necessary to run a lot of cloth of the same style on many different knitting machines. This requires accurate adjustment of these machines, so that the stitches count exactly alike on all of them. Yarns must be very carefully kept separate, and care must be exercised not to mix either two different shipments from the same mill or yarns coming from different mills into one roll of cloth.

All pieces of cloth should be of uniform length. Humidification must be uniform at all times, and the tension rolls on the take-up must be adjusted uniformly.

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pacity for maintaining a constant pH of the dye bath and for slowing up the exhaustion of the dyestuffs. The use of these agents gives the dyer much better control of the dyestuffs throughout the dyeing operation.

After the completion of the rinse, the dye machine is filled with water; and the leveling and penetrating agents are added. The hose are run in this mixture for 10 min. at 100° F. The dyestuffs, dissolved in containers, are added; and the hose are run 10 min. more at 100° F.

The temperature of the bath is gradually raised during 15 min. to 150° F., and the goods are run 30 min. at this temperature. The machine is then stopped, and the hose are sampled and carefully inspected to see if all seams and tight places have been thoroughly penetrated by the dyestuffs. At this point, if the hose are not of the desired shade, the necessary additions of dyestuffs are made.

Three rinses are given the hose before the finish bath is prepared. It is extremely important that no loose materials be left on the hose after these three rinses.

The finishing baths through which the goods are run are prepared in a rotary dye machine in which the water level is kept about 6 in. below the basket axle. The temperature of the water is raised to 110° F., a duller is added, and the goods are run 5 min. A snagproofing agent is then entered, and the goods run 15 min. Finally, a softener is entered and the batch run 5 min. The bath is then dumped and the hose extracted and taken to the boarding room. Many dozen pairs of hose, successfully dyed, have proved the value of the procedures given.

REDMAN SHRINKER

Passes Experimental Test Runs

HIGHLIGHTS: Machine set up at Spring City has successfully handled various weights and types of knit fabric—Relaxation shrinkage needs no chemicals, reduces handling of fabric in finishing—Makers can now figure on commercial-size equipment.

By EARLE E. WEST
Secretary, Underwear Institute, and Secretary, Redman Trust

KNITWEAR MANUFACTURERS and dealers will soon be relieved of the returned-goods and other evils due to excessive fabric shrinkage. Test runs made on an experimental machine, set up at Spring City Bleach & Dye Works, Spring City, Pa., have proved that the Redman process will remove shrinkage from knit fabrics. This process, named after its inventor, Frank Redman, does not require chemicals. There is consequently no chance of deterioration. It is a method of shrinking with the aid only of heat and moisture. In a relaxed state the fibers in the yarn and the yarns in fabric resume their normal stabilized position.

The trustees of the Redman Trust who administer this project, as well as their technical committee, have carried on exhaustive experiments and will continue for a time to do so in order to determine the extent of the practicality of the process. The results have been consistently favorable on light, medium, and heavy-weight knit goods. The process successfully shrinks knit fabric regardless of the treatment to which the fabric has been subjected up to the processing stage. [TW, June '44, p. 131; July '44, p. 91; June, '45, p. 143.]

SHRINKAGE PLUS. In the development of the Redman machine, several completely new devices have been perfected which will materially reduce the cost of finishing knit fabric. One outstanding feature is the development of a method which reduces to a minimum the handling of the fabric during finishing operations.

The machine which is now operating at Spring City through the courtesy and cooperation of Walter Diener, head of Spring City Bleach & Dye Works, is strictly an experimental machine. It was built by Proctor & Schwartz, Inc., of Philadelphia, primarily to determine if the Redman process, which had worked well on a laboratory-scale model, was commercially practical. For this reason, it is equipped with many devices and accessories to permit a thorough exploration of the shrinking problem. Because of the broad capabilities of this experimental machine, all manner of treatments can and have been given to fabrics in order, first, to arrive at a determination of the practicality of the process, and, second, to determine the details of the method which would be most efficient and economical. Experiments have now established what is the best method, and fortunately, this method proves to be the least costly.

Experimental runs to date have been confined largely to all-cotton goods, all-wool, and mixtures containing varying percentages of wool and cotton. The results are extremely satisfactory. Future tests will cover knit goods with various combinations of other fibers, including synthetics, and different stitch constructions. The trustees are convinced that equally favorable results will be obtained on all fabrics and fibers tested.

Engineers have been gathering data from the operation of the experimental machine and within a short time will have a fair estimate of the cost of a commercial machine as well as of the productive capacity of it. Naturally, knit-goods manufacturers are much interested in this project, and no time will be lost in providing manufacturers with the equipment. However, the widespread interest in adapting the process to commercial use as soon as possible will not divert the Redman trustees from making a thorough exploration of the entire shrinkage subject, nor will it be permitted to interfere with further experimentation. It is a primary desire of the trustees to avoid building commercial machines which might shortly become obsolete because of a future development; therefore, they are taking sufficient time during this experimental stage to uncover all the advantages possible for incorporation in the final commercial machine.

DEVELOPED BY INDUSTRY. An outstanding feature of the Redman project is that it is being developed by an industry and for an industry. When the principles of the process were first brought to the attention of the Underwear Institute by Frank Redman, a committee of technical men in the industry was appointed to ascertain their merits. After initial investigation, the committee recommended that the process be developed further to determine if it could be used commercially, economically, and practically by mills; and it was decided that the proper way to determine these points was to construct an experimental machine. This program required the investment of a considerable amount of money. The fact that the success of the process would be of great benefit to the entire knit-fabric industry prompted the idea of the industry developing it. The logical headquarters for such an undertaking was the industry's trade association, the Underwear Institute. A trusteeship was formed as the best medium for carrying out the program. Members of the institute were given an opportunity to contribute to the trusteeship funds which would be used to build a machine and further explore the process to determine its practicality. Contributors to the fund, of course, will be given preference in the use of the process. As is common in a venture of this type, many unforeseen problems arose, and more time than the trustees originally anticipated has been required to build and erect the machine.

It is gratifying to the trustees and the institute members that their original evaluation of the process has been substantiated by results so far obtained on the experimental machine. They now have behind them the many vexatious delays because of labor, material, and other difficulties inherent in a project of this scope. They are looking forward to the time when the problem of shrinkage, which has prevailed since the industry's earliest days, will be eliminated. Then, knitted garments of a given size may be purchased at a store, worn and laundered, and remain the original size through their normal life.

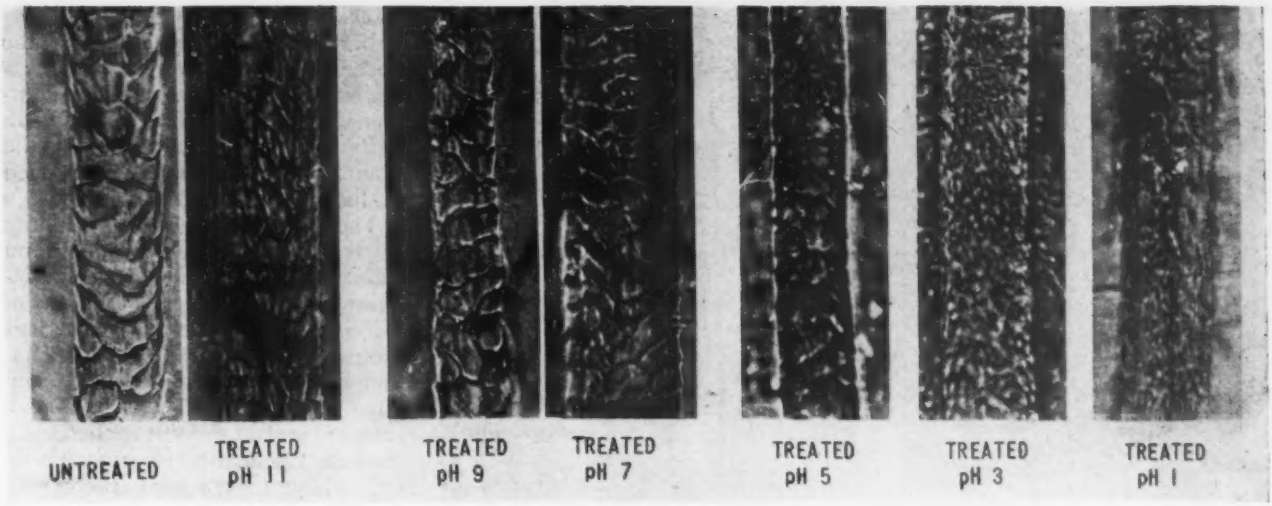


Fig. 1. The surface appearance of wool fibers treated with chlorine at various pH's is shown.

SHRINK-RESISTANT SOCK Treatment Revealed by QMC

HIGHLIGHTS: **Four processes and their effect on wool properties studied —Halogenation, resin, alcoholic potassium-hydroxide, and enzyme processes compared—Felting theories and effect of processes on scale structure studied.**

KNIT-GOODS FINISHING ANNUAL KNITTING SECTION

WOOL'S ABILITY to "full" or "felt" is one of the reasons for its acceptance as a clothing material. In the production of some kinds of wool materials, however, this tendency creates the hazard of shortening the useful life of items made from wool by possible further felting if the garment is subjected to washing. The inability of wool to retain its original size after repeated washings has been recognized for years as its principal limitation, and literature reveals many attempts that have been made to overcome this undesirable characteristic.

At the opening of World War II, the lack of prior commercial research on wool shrinkage in this country and the absence of available processes in the industry generally prevented the U. S. Army Quartermaster Corps from specifying the obvious requirement that all of its wool items be treated to prevent shrinkage. The best that could be done under the circumstances was to direct mild laundering and, in some cases, to specify a construction and finish that would not give the wool an opportunity to felt.

The data presented here were obtained through Quartermaster research on the cause and prevention of shrinkage of wool in socks.

The processes available at the start of the research program were of four main types: (a) halogenation, (b) resin, (c) alcoholic potassium hydroxide, and (d) enzyme.

HALOGENATION PROCESSES. The calcium-hypochlorite inhibitor process could be operated in ordinary wool-dyeing machinery and was the first treatment to be investigated. A treatment involving use of 4.5% of calcium hypochlorite (on the weight of the socks) which contained 70% of available chlorine was arbitrarily selected as a preliminary standard treatment and was conducted as follows.

Three dozen pairs of socks (3,400 g.) were placed in a Smith-Drum machine containing 96 liters of water at 25° C. and 34 g. of a wetting agent stable to chlorine. In a separate container, 153 g. (4.5%) of calcium hypochlorite and 51 g. (1.5%) of the inhibitor were dissolved in 4 liters of water.

This solution was added to the bath in the machine at a constant rate over a period of 20 min., the machine was run for 10 min., and then 153 g. (4.5%) of sulphuric acid in 4 liters of water was added over a period of 20 min. so that the pH decreased at a uniform rate. After 10 min. of further running, 53 g. (1%) of sodium bisulphite was added; and the machine was run an additional 5 min.

The socks were then rinsed and dyed. Active chlorine and pH determinations were made at 5-min. intervals during the addition of the chlorine.

A large number of variations of the above-described process were studied in order to determine the effect of

Abstracted from Textile Series Report No. 46, *The Treatment of Army Socks for Shrink Resistance by the Quartermaster Corps*, prepared jointly by the staffs of the Harris Research Laboratories and the Textile Research Laboratory of the Research & Development Branch located at the Philadelphia Quartermaster Depot. Copies are available from the Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C., at $1.50.

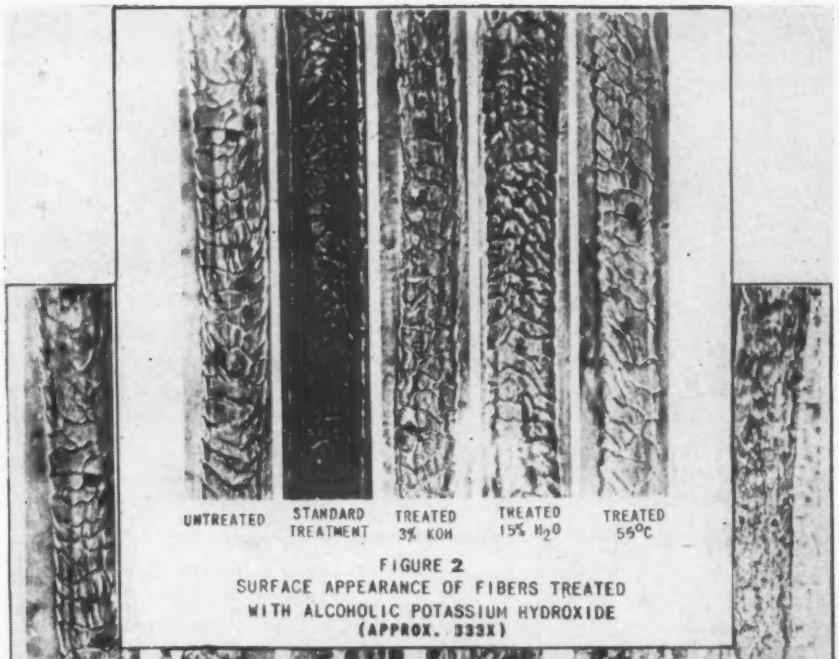


FIGURE 2
SURFACE APPEARANCE OF FIBERS TREATED WITH ALCOHOLIC POTASSIUM HYDROXIDE
(APPROX. 333X)

FIGURE 2A
SURFACE APPEARANCE OF COMMERCIALLY TREATED FIBERS
(APPROX. 340X)

temperature, the effect of varying the proportions of different reagents, and the effect of varying the manner of adding the reagents. The results of these studies are summarized in Table I.

Apparently the rate of adding the sulphuric acid was one of the most critical of the factors investigated. When the sulphuric acid was added in a 30-sec. period, the 30% index[1] of the fiber decreased and the alkali solubility increased. These results indicated unnecessary injury to the fiber, although the amount of shrinkage was practically unchanged. However, the chlorine could be added in a 30-sec. period without causing the results to differ from those obtained by the standard method.

Theoretically, calcium hypochlorite reacts with the inhibitor to form chloramine-T, which then decomposes with a gradual liberation of chlorine. However, calculations showed that the above amount of inhibitor used was sufficient to combine with only 13% of the hypochlorite present. When chemically equivalent amounts of hypochlorite and inhibitor were used, the results were almost identical with those obtained by the use of chloramine-T alone, indicating that the chloramine is actually formed in the process. Surprisingly, however, hypochlorite alone, or hypochlorite and acid, gave as good as or better shrinkage control and apparently caused less damage than any of the calcium-hypochlorite-inhibitor treatments. Furthermore, the rate of reaction in the latter treatments was practically the same as it was when hypochlorite alone was used. These results suggested that worthwhile reductions in chemical costs might result from a further investigation of the hypochlorite reaction itself.

TABLE I—Effect of Variations in the Calcium- Hypochlorite Inhibiter Treatment Applied to Cushion-Sole Socks

Treatment	% Shrinkage	% Alkali Solubility	% 30 % Index[1]
Untreated	23	16.0	99
4.5% calcium-hypochlorite inhibitor at 15° C.	11	17.5	92
4.5% calcium-hypochlorite inhibitor at 25° C. (standard)	11	17.0	93
4.5% calcium-hypochlorite inhibitor at 35° C.	8	18.2	91
4% calcium-hypochlorite Chloramine T	11	17.9	93
4.5% calcium-hypochlorite inhibitor, added instantly	10	17.6	91
Standard treatment, but acid added instantly	10	18.6	88
Chemically equivalent amounts of calcium hypochlorite and inhibitor	7	24.6	94
Chloramine T and acid	7	23.2	94
Calcium hypochlorite and acid	8	14.8	94
Calcium hypochlorite	8	14.9	94

TABLE II—Effect of Controlled Chlorination Treatments Applied to Cushion-Sole Socks

Treatment	% Shrinkage	% Alkali Solubility	% 30 % Index	% Loss of Weight
Untreated	23	16.0	99	....
3% calcium-hypochlorite*	8	13.2	98	2.0
4.5% calcium-hypochlorite	6	13.8	97	3.8
8% calcium-hypochlorite	5	14.8	96	8.0
12% calcium-hypochlorite	5	18.6	92	8.6

* On the weight of the socks.

CONTROLLED CHLORINATION. In the controlled-chlorination process, hypochlorite treatments of several concentrations were first investigated using calcium hypochlorite (containing 70% of available chlorine). In these tests the calcium hypochlorite was added over a period of 20 min. in a buffered solution, and the machine was run for 10 min. One percent sodium bisulphite was then added, and the socks were rinsed and dried as usual. The results of these tests are shown in Table II. It should be pointed out that when alkaline hypochlorite is used alone, the wool is yellowed.

In every case, the shrinkage control was as good as or better than that obtained with the inhibitor process previously described. With the 12% calcium hypochlorite, the alkali solu-

[1]A measure of resilience and elasticity as determined by the Sookne-Rutherford autographic stress-strain balance. A single fiber was mounted between two glass hooks about 2 in. apart, soaked in distilled water for 24 hr., stretched while wet to 30% of its original length, and allowed it to recover. The elongation and recovery curves of the fiber were recorded. The fiber was then inclosed in a perforated saran capsule and processed with socks during treatments at the pilot plant. After the treatment, the fiber was removed from the capsule and again stretched to 30% of its length. The ratio of the work required to stretch the treated fiber to the work required to stretch the untreated fiber is known as the "30% index."

bility was high; but the 30% index indicated little damage. The loss of weight was high for both the 8% and 12% treatments, but these concentrations appeared unnecessarily high as little improvement in shrinkage control was obtained by using more than 4.5% calcium hypochlorite on the weight of the socks (7% on the weight of the wool).

Although the treatment involving the use of 4.5% calcium hypochlorite offered a simple, effective, and inexpensive solution to the problem of producing shrink-resistant wool socks, numerous other halogenation processes were studied and evaluated in order to determine their advantages and disadvantages in comparison with the controlled-chlorination process. These are discussed briefly in the sections that immediately follow, and the results obtained on all of the halogenation processes are summarized in Table III.

The acid-calcium-hypochlorite process utilized calcium hypochlorite in an acid bath at a low temperature. A 40:1 bath containing 1% HCl (commercial) and 1% NaCl on the weight of the liquor was prepared at 20° C. Then hypochlorite was added over a 20-min. period so that the available chlorine was 3.5% on the weight of the wool. The machine was run for 5 min.; and the socks were treated with sodium bisulphite, rinsed, treated with a cationic softening agent, rinsed again, and dyed in a normal manner.

This treatment gave excellent shrinkage control, and only a slight increase in the alkali solubility, but caused an appreciable decrease in the 30% index, including decrease in strength of the wool fiber.

ACID SODIUM HYPOCHLORITE. The acid sodium-hypochlorite process involved immersing the socks in a bath containing 1% of a wetting agent to which was added sodium hypochlorite over a 5-min. period to yield 3.2% available chlorine on the weight of the wool. Following this treatment, sulphuric acid was added over a 5- to 10-min. period until a pH of 3 was reached. After 25 min., the bath was dropped, and the socks were treated with bisulphite, rinsed and dyed. With this treatment it was difficult to secure level dyeing, and the degree of shrinkage control was not regarded as satisfactory. However, there was little fiber damage, as indicated by the alkali solubility and the 30% index of treated fibers.

Another process used sodium hypochlorite in conjunction with wetting and protective agents. A bath containing 10% of a wetting agent on the weight of the socks was put in the machine and mixed for 5 min. The socks were then added, the machine was run for 5 min., 10% of a protective agent was added, and the treatment was continued for 5 min. Sodium hypochlorite was added over a 5-min. period so that the available chlorine was 2.5% on the weight of the wool; the machine was run for 20 min., and the socks were rinsed. A pH of 3.5 was maintained throughout the process. In the subsequent dyeing, 5% each of a wetting agent and a dyeing assistant on the weight of the socks was added to the dye bath, and the dyeing was conducted in a normal manner. A final treatment of 1 to 2% of a cationic softening agent was used.

This treatment gave shrinkage control comparable to that of the calcium-hypochlorite-inhibitor process and caused only a slight decrease in the 30% index, but it increased the alkali solubility substantially.

The sodium-hypochlorite sulphamic-acid treatment involved treatment with a compound resulting from the action of sodium hypochlorite with sulphamic acid. In this process, the wool was protected by treatment with formaldehyde. Excellent shrinkage control was

TABLE III—Effect of Wet Halogenation Treatments Applied to Cushion-Sole Socks

Treatment	% Shrinkage	% Alkali Solubility	% 30 % Index
Untreated	23	16.0	99
4.5% calcium-hypochlorite inhibitor process	11	17.0	93
4.5 calcium controlled-chlorination process	6	13.8	97
Acid calcium-hypochlorite process	2	16.2	87
Acid sodium-hypochlorite process	15	15.6	96
Sodium-hypochlorite plus a protective agent	10	20.2	93
Sodium-hypochlorite sulphamic-acid treatment	2	24.2	72
Wet-bromination treatment	−1	24.5	82

TABLE IV—Effect of Resin Processes Applied to Cushion-Sole Socks

Treatment	% Resin Content	% Shrinkage	% 30 % Index
Untreated	....	23	99
Resin process No. 1	11	17	99
Resin process No. 2	15	4	95
Resin process No. 3	5	1	99

TABLE V—Effect of Variations in the Alcoholic Potassium-Hydroxide Process

Independent Variable	% Conc. of KOH	% Moisture Content of Alcohol	Temp. of Treatment	Time of Treatment	% Shrinkage	% 30 % Index	% Loss of Weight	% Alkali Solubility	% Sulphur Content	% Cystine Content	KOH Consumed (mg/g)
1. Concentration of KOH	0.4	5	25	30	4	97	0.5	12.4	....	11.4	6
	0.8	5	25	30	2	98	0.6	12.0	....	10.6	14
	1.6	5	25	30	2	96	0.4	11.8	....	10.9	21
	3.0	5	25	30	0	98	0.5	10.2	....	9.2	42
2. Moisture content of alcohol	0.8	2	25	30	3	100	0.2	11.8	3.40	10.2	——
	0.8	5	25	30	2	98	0.6	12.0	3.23	10.6	14
	0.8	9	25	30	3	97	0.6	9.6	3.10	9.6	42
	0.8	15	25	30	3	88	0.8	9.4	3.03	9.2	53
3. Temperature of treatment	0.8	5	15	30	4	98	0.4	12.4	3.39	11.0	5
	0.8	5	25	30	2	98	0.6	12.0	3.23	10.6	14
	0.8	5	35	30	4	97	0.6	9.9	2.84	8.1	31
	0.8	5	55	30	4	80	1.8	14.8	2.39	6.1	55
4. Time of treatment	0.8	5	25	15	4	95	0.5	12.5	....	11.5	5
	0.8	5	25	30	2	98	0.6	12.0	....	10.6	14
	0.8	5	25	50	3	97	0.6	11.6	....	11.0	16
	0.8	5	25	90	3	97	0.6	10.4	....	10.4	30
5. Control	....	....	....	....	23	99	....	12.0	3.44	11.5	....

TABLE VI—Effect of Various Treatments on the Coefficient of Static Friction of Wool Fibers Against Wool Felt

Treatment	pH	Coefficient of Friction				Friction Ratio		Friction Index		Shrinkage %
		Dry		Wet						
		Max.	Min.	Max.	Min.	Dry	Wet	Dry	Wet	
Untreated	....	0.35	0.21	0.42	0.30	....	....	....	....	23
4.5% Ca (OCl)$_2$	11	0.39	0.32	0.42	0.32	127	104	50	92	11
4.5% Ca (OCl)$_2$	9	0.39	0.34	0.37	0.33	130	97	36	33	10
4.5% Ca (OCl)$_2$	7	0.34	0.33	0.48	0.47	120	132	7	8	−3
4.5% Ca (OCl)$_2$	5	0.38	0.35	0.49	0.46	130	132	21	25	1
4.5% Ca (OCl)$_2$	1	0.34	0.31	0.53	0.51	116	145	21	17	−2
0.8% alc. KOH (5% water)	....	0.38	0.30	0.44	0.36	122	111	57	67	2
0.8% alc. KOH (15% water)	....	0.35	0.31	0.42	0.36	118	108	28	50	3
Thermosetting resign No. 1	7	0.37	0.32	0.45	0.35	123	111	36	42	17
Dry chlorination	3	0.41	0.37	0.43	0.36	139	110	29	58	*

* No data.

obtained by this method; but the fiber modification, as indicated by a very low 30% index and high alkali solubility, appeared to be undesirably great.

Only one wet-bromination method was tested. The treatment was carried out at 17° C. and pH 1.6. The bromine water was fed into the bath at such a rate that the concentration did not exceed 200 p.p.m., and 7% bromine on the weight of the wool was added over a period of 50 min. The socks treated by this method did not dye level; and the fiber damage was great, as indicated by both 30% index and alkali-solubility tests. However, the shrinkage control was the best of this series.

SUMMARY. The comparison of the laboratory results of the evaluation of the wet-halogenation processes shown in Table III indicates that from the standpoint of shrinkage control alone, several of the other treatments were found to be equal to or more effective than the calcium-hypochlorite inhibitor or controlled-chlorination processes. However, most of these other processes were considered to be objectionable because of the apparently substantial increase in alkali solubility or reduction in 30% index which they produce, or both. On the basis of the laboratory studies, the controlled-chlorination process appeared to be the most desirable because it gave satisfactory shrinkage control and produced less modification than the other halogenation processes.

RESIN PROCESSES. In the first resin process to be tried; the resin was applied as a monomer. A 25:1 bath-goods ratio was used, and the socks were treated with an 11.2% resin solution, which also contained catalysts for polymerization and softening agents to minimize any boardiness. The socks were agitated in this bath for 20 min. at 25° C., centrifuged to 110% pick-up, dried to less than 5% regain, and cured on board for 2 min. at 250° F.

The results of this test as shown in Table IV were disappointing in the amount of shrinkage control obtained. Furthermore, the socks were slightly stiffened and became lighter in color as a result of the treatment, although the latter presented no problem since allowance could be made for it during dyeing. No fiber damage was detected in the treated socks.

The second resin process investigated, like the first, employed the resin as a monomer. In the test, the socks were first extracted with carbon tetrachloride, dried, and treated for 20 min. with a 15% resin solution containing catalysts and softening agents. After being extracted to 110% pick-up, dried to 20% pick-up, and boarded, the socks were cured in a raw wool stock dryer for 10 min. at 300° F., wet for 20 min. at 120° F., dried, and reboarded.

This process afforded good shrinkage control, but again the socks were slightly boardy and off-shade after treatment. Slight damage to the fiber resulted, but not to an excessive degree.

The third treatment was of the non-cure type, involving the application of a prepolymerized resin which was applied from an emulsion containing 2.5% resin on the weight of the socks. The bath, which was maintained at about pH 5, contained 50% anhydrous sodium sulphate. The treatment was conducted at approximately 145° F., and the socks were allowed to remain in it until the bath became clear.

Of the three resins evaluated in this test, it was found that this latter type, which used the smallest amount of add-on, provided the best shrinkage control and caused the least fiber damage as indicated by the 30% index. The items processed by this method also showed less change in hand than any of the other resin-treated socks.

When it was decided to adopt the controlled-chlorination process and convert industry over to its use, it became expedient to concentrate available personnel on the application aspects of that treatment, with the result that further study of the cure-type-resin treatments was discontinued insofar as socks were concerned. However, it was found that resin process No. 3 was especially adaptable to certain constructions of 100% wool socks on which the controlled-chlorination process could not be used with good results. Accordingly, procurements of these socks were made with the resin treatment applied. Further extensive work in the application of resins to fabrics and other materials was resumed at a later date.

ALCOHOLIC POTASSIUM HYDROXIDE. Preliminary trials of the alcoholic potassium-hydroxide process, which involves the treatment of the fabrics with an alcoholic solution of potassium hydroxide, were run in the laboratories of United States Industrial Chemicals, Inc., using the following general procedure. Socks, yarn balls, and calibrated fibers were treated with six times their weight of alcoholic potassium hydroxide, squeezed to about 200% pick-up, neutralized with alcoholic carbon dioxide, and dried. In general, this treatment gave good shrinkage control and apparently caused little fiber damage. The effects of variation in the concentration of the KOH, the moisture content of the alcohol, and the time and temperature of the treatment were studied, and the results of the tests are shown in Table V.

Increasing the temperature of the treatment appeared to cause increased fiber damage without improving the shrinkage control. At a temperature of 55° C., excessive damage was indicated by a low 30% index, low sulphur and cystine content, increased alkali solubility, and a greater loss of weight. When the moisture content of the alcohol was 15%, damage was reflected in the 30% index and a somewhat lower cystine content. In both cases the low 30% index was associated with the highest consump-

(*Continued on page 232*)

Use of the rotary dyeing machine is one of two modern methods which may be used in dyeing hosiery.

Tacking the edges of tricot fabric prevents selvages from curling during processing.

KNIT-GOODS FINISHING
ANNUAL KNITTING SECTION

From New Rayon Book

This article is condensed from the forthcoming book, "RAYON TECHNOLOGY—*Handbook for Mills*," being published by McGraw-Hill Book Co., Inc.

Special Handling Required for Some RAYON KNIT GOODS

HIGHLIGHTS: Acetate tricot most difficult to dye because of tendency to show cracks — Improved technique produces crack-free results — Spun rayons mostly dyed on reels—Two methods used in dyeing rayon hosiery.

OF THE MANY TYPES of knit fabrics made from synthetic continuous-filament or staple yarns, tricot fabrics and hosiery require special care in finishing. Continuous-filament and spun-rayon circular-knit fabrics can be dyed and finished in a manner similar to cotton; but, in some cases, use of special agents is desirable.

TRICOT. Of acetate-rayon and viscose-rayon tricot fabrics, the former is much more difficult to dye because of its tendency to show cracks from the rope treatment in which it is processed. Viscose can be handled in the rope form without any such cracks developing, so the following discussion of precautions in tricot handling pertains to acetate rather than viscose fabrics.

Because of the tendency of selvages of the majority of tricot cloths to curl badly during processing, the edges are either sewn or tacked directly after knitting. In some plants, the edges are sewn on a special type of high-speed sewing machine with a scroll attachment which removes the curl before sewing. The result is a continuous tube of fabric which remains in this form until the last operation before shipping.

The conventional technique used in many dyehouses in the trade to handle acetate tricot is as follows:

Tack the edges at approximately 6-in. intervals, bundle each piece, and load into the vessel in cold water. Run the machine, raising the temperature gradually, and add soap or synthetic detergent for scouring. Raise the temperature to 120° F., add the dyestuff slowly, then raise the temperature slowly to 160° F. Continue dyeing for 2 to 3 hr. until shade is matched.

This method invariably causes a cracked and rope-marked appearance in the fabric; and if the temperature were raised to 180° F. or 190° F., this ropey appearance would be intensified.

The problem of getting a dyed result free from cracks has been solved to a great extent by several methods, all essentially the same. This is by passing the flat fabric through boiling water or soap liquor for a short time, followed by a shock of cold water to the still flat-running fabric. This treatment can be given continuously on an open soaper, or as is used in England, on a continuous-blanket arrangement with overhead boiling sprays to wet the cloth thoroughly, followed by cold sprays. After the foregoing, the goods can be roped, scoured, and dyed at a temperature still substantially below the boil, without showing the cracked condition.

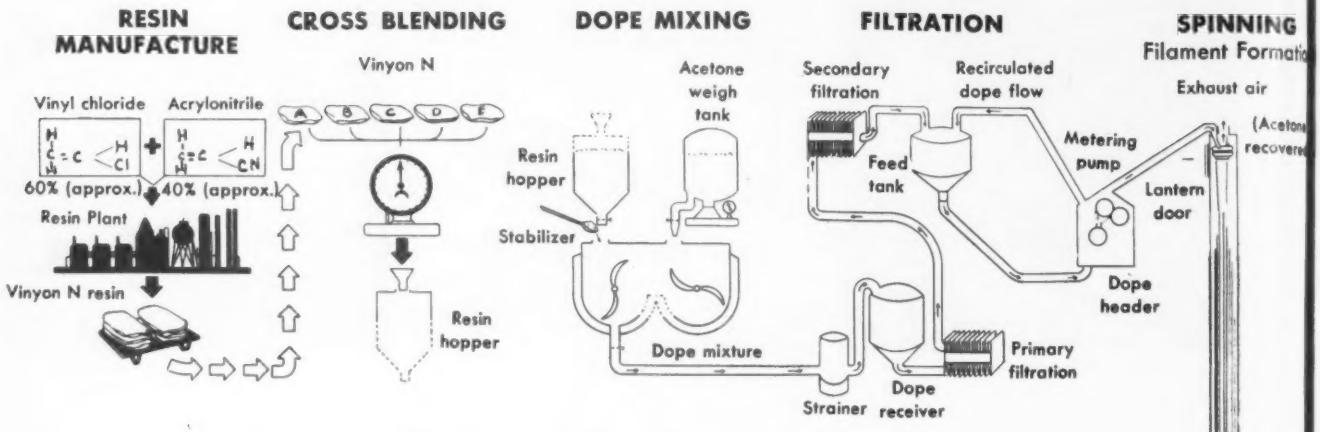
The usual method for finishing has been to extract, remove the tacking thread, open by hand, and dry on the pin tenter. This is a tedious process and has been improved in some plants by the use of a pin tenter with a selvage opener which speeds the drying operation considerably.

In Britain, the Pegg system of drying is used. This consists of a cartridge upon which the tubular-sewn fabric is dressed and from there drawn upward over a tubular cage and spreaders through which hot air is blown to dry the fabric. Directly following the drying, the cloth passes to a finishing calender which consists of metal heated rolls and continuous felt belts. This method is somewhat slow but is used by practically every finisher of tricot in Britain.

A method of drying recently announced is the suction-cylinder dryer, a machine developed by a member of the staff of the Textile Research Dept. of American Viscose Corp. in conjunction with Proctor & Schwartz engineers. This machine is giving satisfaction in the trade and consists of a perforated drum and a suction device which draws the heat through the cloth. The tubular-sewn fabric passes around a spreader onto the

(*Continued on page 231*)

VINYON N Is Being



VINYON N — Available Forms and Physical Properties

NEXX - Loose fibers (appearance of wool). Resilient, water and fire resistant, moldable.

NEZZ - 400/40 in 1- to 3-lb. cones. High extensilibity; 0.7 g.p.d. (wet); 99% elong.

NEHT - 400/40 in 1- to 3-lb. cones. Stiff, resilient, crush resistant; 0.8 g.p.d. (wet); 9% elong.

NOZZ - 55 to 200 den. at 0.75 den. per fil. in 1- to 3-lb. cones. 75 to 200 den. at 2.0 den. per fil. in 1- to 3-lb. cones. Controlled shrinkage, low elongation, elastic, high wet strength; 3.7 to 4.2 g.p.d. (wet); 10 to 13% elong.

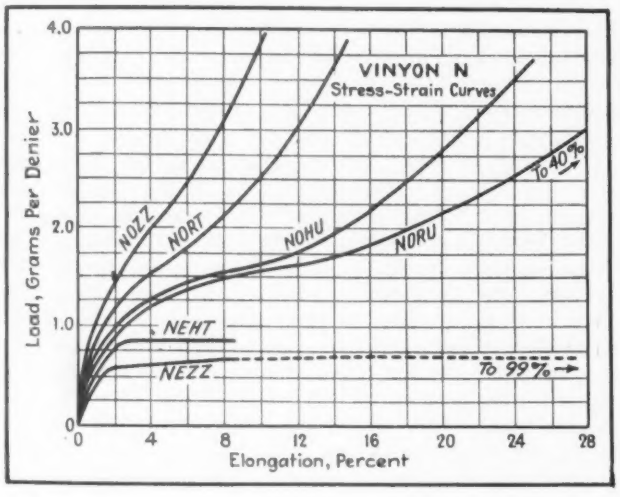
NOHO - 65 to 225 den. at 0.8 den. per fil. in 1- to 3-lb. cones. 95 to 280 den. at 1.2 den. per fil. in 1- to 3-lb. cones. Silk-like, quick drying, can be formed, fire resistant; 3.5 g.p.d. (wet); 23 to 25% elong.

NORU - 100 to 400 den. at 1.2 den. per fil. in 1- to 3-lb. cones. High-impact properties; chemical, heat, and mildew resistant; 3.0 g.p.d. (wet); 40% elong.

NORT - 150 to 250 den. at 0.75 den. per fil. in 1-lb. cones, Low elongation, good strength at high temperatures, chemical resistant; 3.9 g.p.d.; 15% elong.

Meaning of yarn-description letters

- **N** - Denotes type N Vinyon
- **E** - Extruded (unstretched)
- **O** - Oriented (stretched)
- **H** - Head modified
- **R** - Reacted (higher temp. than H)
- **T** - Treated under tension
- **U** - Untensioned during treatment
- **X** - No direct significance
- **Z** - No direct significance



Materials Made With Vinyon N

(Partial List)

Woven Fabrics
Upholstery, Drapery, Dust bag, Filter (various), Rug (pile), Work cloth (acid resistant), Automobile window channel, Necktie, Dress, Bathing suit, Raincoat, Seat cover, Bandage, Jacquard, and Shoe.

Knit Fabrics
Tricot, Circular (some using two types of Vinyon N), Men's socks, and Shoe (molded).

Yarns and Thread
Shoe-sole thread, Cordé, Fish line, Industrial sewing, Dental floss, Household thread, and Lacing cord.

Miscellaneous
Pillow stuffing, Mattress stuffing, Flocking, Air-filter packing, Pressed packing material, Shoe sole, and Battery separator.

VINYON N—Shrinkage Table (Shrinkage in Percent)

	80°C		100°C		120°C	
Type	Dry	Wet	Dry	Wet	Dry	Wet
NOZZ	8.5	13.0	15.0	21.0	25.0	53.0
NOHU	-	-	-	1.0	2.2	37.4
NORU	-	-	-	0.5	-	6.0
NORT	-	-	-	3.0	-	5.4

Produced in Seven Types

HIGHLIGHTS: *Pilot plant under way producing 500 lb. of continuous-filament yarn daily for commercial trials—Controlled shrinkage of some types utilized for novel effects—Shaped forms can be achieved—Wide range of types makes many uses possible.*

By C. W. BENDIGO, *Editor* TEXTILE WORLD

THE ADDITION OF ACRYLONITRILE to vinyl chloride has resulted in a whole new range of textile fibers, called Vinyon N, which are non-cellulosic and which are now being produced in continuous-filament form in a pilot plant at South Charleston, W. Va. The plant was built and is being operated by Carbide & Carbon Chemicals Corp. Its capacity is 500 lb. of the new fiber per day.

The pilot plant was built to produce quantities of this new yarn for full commercial test runs and to develop manufacturing procedures which are quite new. The few months of operation of the batch-process pilot plant has already pointed the way to continuous operations in a full-scale plant, corporation officials say. Carbide & Carbon Chemicals Corp. is undecided whether to concentrate only on supplying chemicals to yarn manufacturers, as it has done in the past, or to go into large-scale yarn production themselves.

The flow chart on these pages shows how Vinyon N is produced in the pilot plant. On it are indicated points along the flow where each of the seven types are taken from the flow for packaging and shipping. Accompanying tables give other pertinent information; for still more, see TEXTILE WORLD'S 1947 Synthetic-Fiber Table.

HEAT RESISTANT. In addition to its acrylonitrile content, Vinyon N differs from the older Vinyon in that some types are quite heat resistant. Of the types that do shrink, some can be controlled to permit novel effects similar to that obtained from crepe yarns. The property is also used to shrink yarn to take the shape of forms.

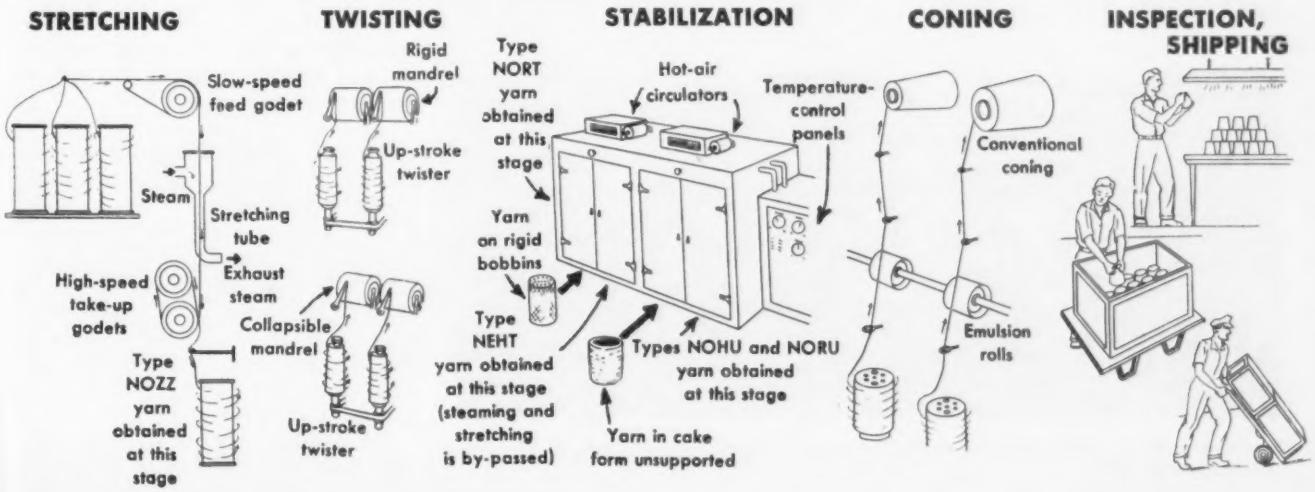
Confusion that might exist from initial contemplation of the seven new yarns produced can be clarified somewhat if it is remembered that as Vinyon N is spun it is coarse and relatively weak although resilient and resistant to many chemicals. It might be likened to wool which it resembles when spun free (no take up). There are two after-treatments which greatly alter the property of Vinyon N: (1) stretching which greatly increases the strength and permits very fine filaments and (2) dry-heat treatment which stabilizes the yarn. Degree of heat can be low or high depending on the degree of stability wanted. Some yarn is stabilized under tension, some under no tension.

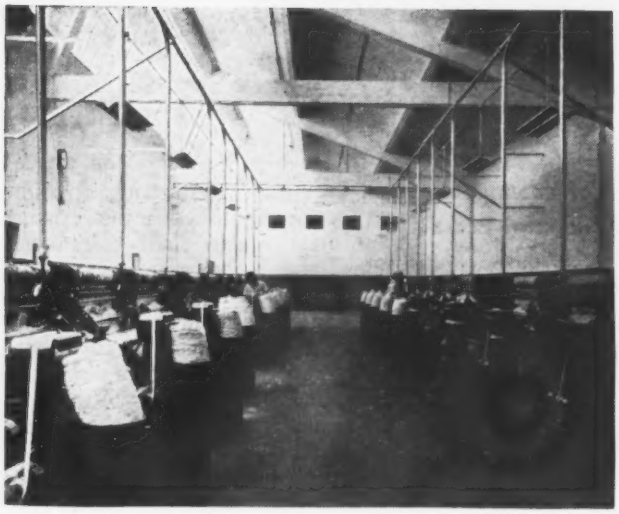
The yarn produced has a honey color. It is not bleached in the producing plant, but can be bleached, before dyeing, if desired. It is claimed that dyeing in a wide range of colors can be accomplished using existing dyes and regular plant equipment. Temperatures, however, are usually high: at or near the boil for the types that can stand boiling or the types that are purposely being shrunk. Slashing of warps can be accomplished on regular rayon-type slashers. Vinyon N can be processed on conventional mill equipment.

Except for one type (NEXX—see table of available forms), which can hardly be thought of as staple, very little work has been done so far with Vinyon N staple. Some waste, however, has been garnetted and exhibits excellent cohesion. It is quite full and silky. More extensive research into staple will start soon.

Utilization of the controlled-shrinkage properties of Vinyon N may lead to uses not visualized today. The types that do not shrink might find use in many conventional textiles, perhaps even in women's hosiery, although at present there are problems to be overcome in this connection. In the words of H. S. Bunn, Carbide & Carbon vice president, "The place Vinyon N yarn will take in the textile industry will develop from intelligent and well-engineered utilization of its inherent properties. It is not expected to replace cotton or viscose rayon or cellulose acetate or nylon or wool. Rather, it is expected to find its place in those uses where present fibers are inadequate."

Eldon Stowell, of the Bakelite Div. of Carbide & Carbon, at 30 E. 42nd St., New York, N. Y., is in charge of experimental and development work being done in textile mills.





Card room has low air velocity to protect web. Lint collection was major problem to overcome.

Weave room has no overhead duct work in room 395x105 ft. Brick ducts are underground or incorporated into building.

AIR-CONDITIONED Plant Solves Cotton-Lint Problem

HIGHLIGHTS: *Argentine installation called model unit—Carding, spinning, and weaving controlled separately from central station—Ducts inside rooms eliminated—Special filters designed for quick cleaning—Evaporative cooling used.*

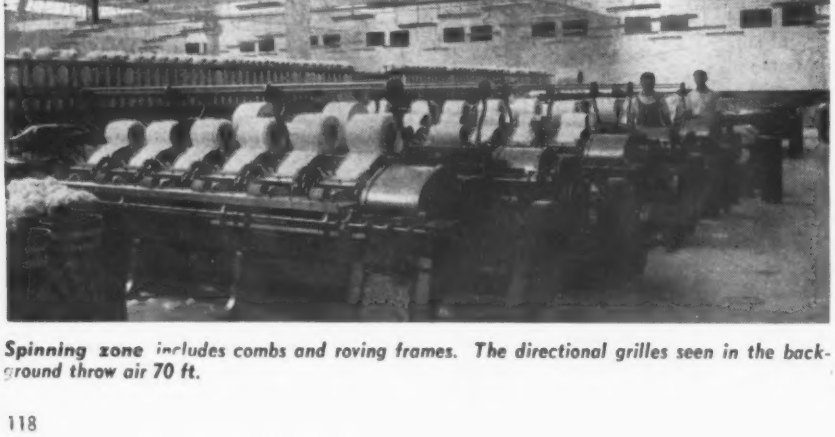
By GEORGE T. LANG
Textile Engineer, Buenos Aires, Argentina

THE NEW AND MODERN PLANT of La Hidrofila Argentina, S. A., latest important addition to the Argentine's rapidly growing and steadily modernizing textile industry, has been provided with an extensive air-conditioning system. This system is based on evaporative cooling, the application of which to the local textile industry has already reached definite acceptance.

This air-conditioning installation has been the latest and most complete of a series of similar systems, and it is perhaps not quite a coincidence that the first of this series of evaporative-cooling systems had been installed some 6 yr. ago in the older part of La Hidrofila Argentina's plant. The manufacturers recognized at an early stage the important advantages offered by this system; and, after having been given the opportunity of pioneering, they now installed in their new plant a similar, but much more extensive and, of course, much improved system.

The new plant includes many improvements based on the experience gained with a series of similar plants and 6 yr. of operation. Theoretically, however, the system remained much the same; and most of the basic components are practically unchanged.

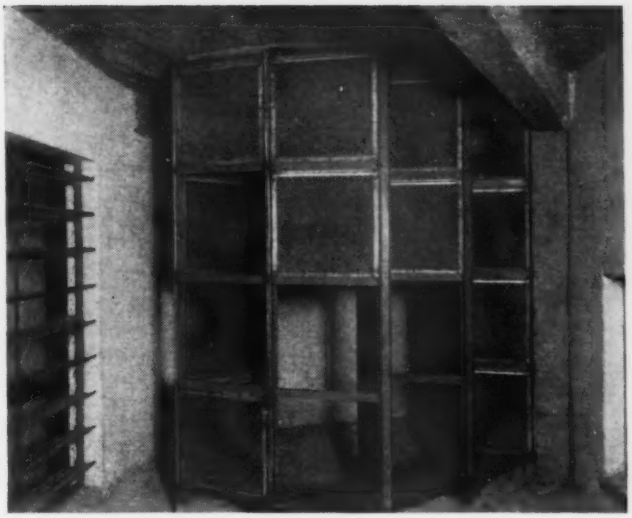
The air-conditioning system of this new plant is divided into three completely independent zones in the carding, spinning, and weaving units. Of these three zones, the spinning and weaving units are provided with evaporative-cooling equipment. The carding section, although not equipped with evaporative cooling, presents a very difficult and interesting ventilating and filtering problem and will be described, therefore, in detail.



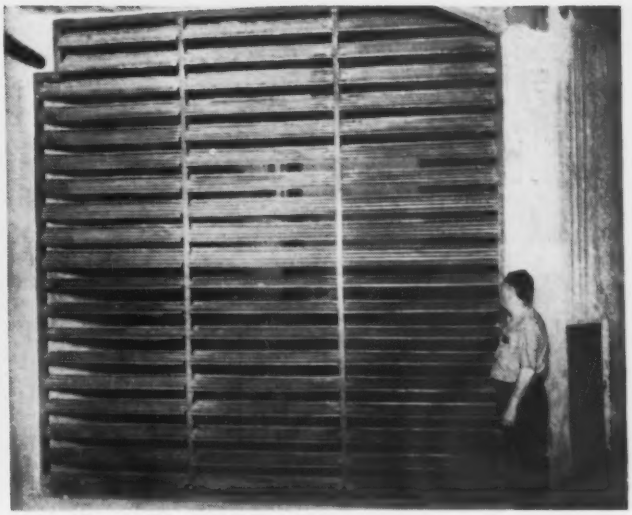
***Spinning zone** includes combs and roving frames. The directional grilles seen in the background throw air 70 ft.*

CARDING. The carding zone presents the severest problem as to the filtering and distribution of air, both injection and return. No perceptible movement of air is permitted in this zone because of the danger of tearing the web on the cards. Consequently, the air has to be injected as high as possible, and grilles have to be provided with directional vanes permitting exact regulation.

The carding room of La Hidrofila's new plant is about 120 ft. long and



***Return-air filters** are placed so that air velocity is not over 100 to 200 fpm.; thus, lint collects mainly on surface of filters.*



***Size of air ducts** can be gaged from this photograph. Dampers shown regulate exhaust air.*

33 ft. wide, the roof being of the shed type. Cards are placed in two rows along the room.

Two underground return-air ducts run on both sides of the room along the side walls, with vertical return stacks located within the walls. Ample surface of return grilles has been provided to obtain a very low face velocity of about 200 fpm. The return grilles are of plain stamped type with free openings of $\frac{5}{8}$x$\frac{5}{8}$ in. in order to avoid excessive clogging of lint but not permit the entrance of foreign matters of larger size to the return ducts. Return ducts are greatly oversized to permit good access along the entire duct for cleaning, as much lint accumulates in these ducts. This is regarded as favorable since it somewhat lightens the air filtering. The necessity of weekly cleaning of return ducts was anticipated, and easy access has been provided to both return ducts.

The equipment serving the zone of the carding room has been placed in a basement below one end of the room. The two main return ducts unite before entering the basement. Supply ducts leaving the basement are also divided in two, each supplying air to the grilles located on short walls of the room. A throw of 60 ft. was required from each side, so the face velocity could not be fixed too low; and, consequently, grilles with directional vanes have been selected to obtain uniform and draftless air distribution.

Preliminary studies of other plants showed the necessity of having a positive control of exhaust for the carding room, as in this zone the severest problem is presented by the very heavy concentration of lint in the air. This reaches such an extreme that the conventional solution of supplying the greatest possible volume of fresh air does not solve the problem. In order to avoid drafts, the number of air changes is limited; and, on the other hand, it is not permissible that the lint-loaded air should be expelled from the room, as it would cover the surroundings and affect the air intakes of other zones. To avoid this, even the expelled air has to be filtered.

The solution has been to provide two fans, one of which exhausts the air through the return ducts and filter chamber and expels it to the outside, while the other fan provides the air supply through the air intake and supply ducts. Filtering of the fresh air is unnecessary.

In summer, the exhaust and supply circuits are working completely separately as has been described. In winter, however, to avoid unnecessary waste of fuel, it is necessary to recirculate part of the exhausted air. For this purpose, dampers are placed in the duct on the discharge side of the exhaust fan, opening alternately to the duct leading to the outside or to the return chamber. Another damper regulates the fresh-air intake of the supply fan. All three dampers are actuated by damper motors, which are synchronized and controlled by a single thermostat placed in the return-air stream. An air heater is placed in the supply duct controlled by a motorized valve of proportioning type.

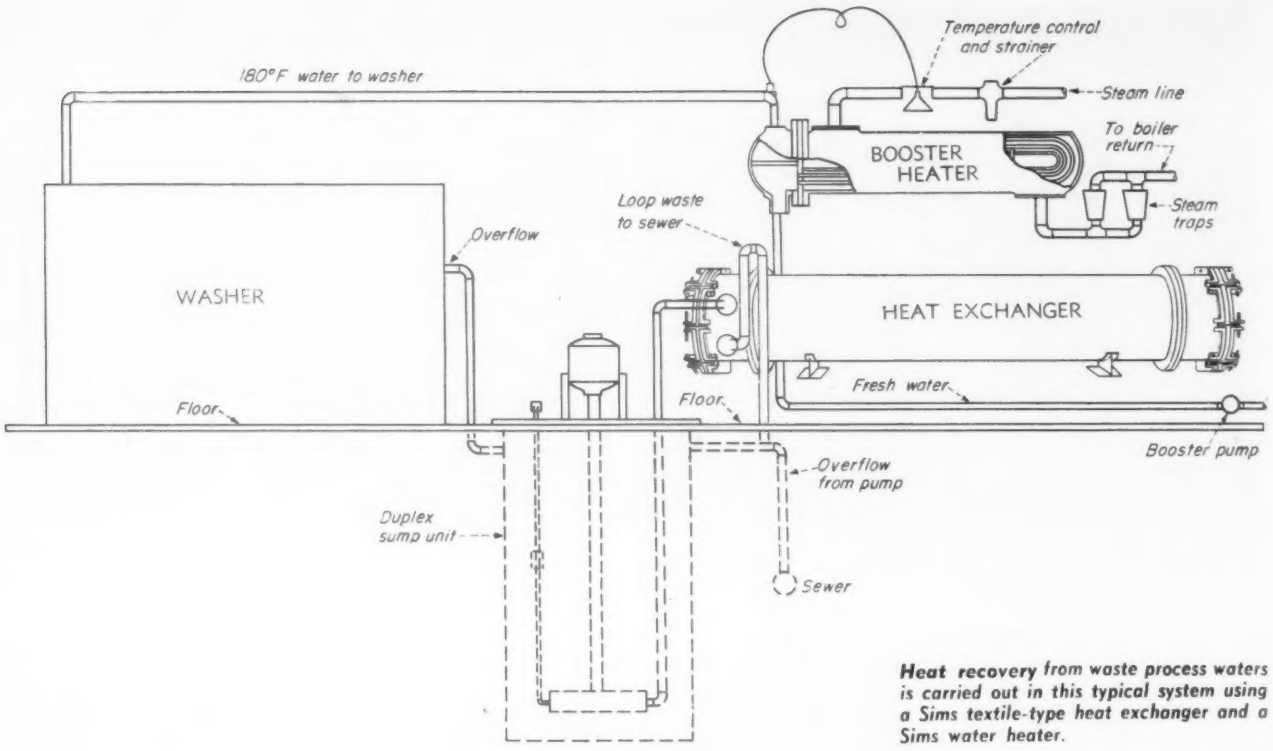
The valve is controlled by a proportioning hygrostat and a low-limit thermostat. The hygrostat calls for heating in winter when relative himidity is too high. As long as the heater is able to maintain the correct air temperatures, 100% fresh air is supplied; but the heater is sized only for heating the minimum amount of 25% fresh air at the design temperatures; and, consequently, the return thermostat gradually opens the return damper and closes the fresh-air damper.

As practically all impurities of the air consist of lint, which is impossible to clean from filters with standard methods such as an oil bath or an air stream, metallic air-filter panels used are of special construction, permitting easy disassembling of panels for the periodic cleaning of every layer. A great part of the lint remains on the surface on which air enters the filter bank, where it forms a layer which is easily removed with a wire brush or by hand. This cleaning has to be effected daily; but, even so, the lint gradually enters the inside of the panels.

The performance of filters was tested both dry and oiled, and it has been proved that filters have a much greater efficiency when coated with oil; but it is somewhat more difficult to remove the lint mat from the surface of panels. Because of the very high high lint concentration, air ve-

(Continued on page 218)

***Central control panel** for all three zones has battery of lights to show operation of motors and controls. Color of light tells whether operation is manual or automatic.*



Heat recovery from waste process waters is carried out in this typical system using a Sims textile-type heat exchanger and a Sims water heater.

Wasted B.t.u.'s Recovered By HEAT EXCHANGER

HIGHLIGHTS: *Southern mills make annual savings equal to 70 to 90% of equipment investment—Heat from waste liquors preheats fresh water from boiler in heat exchanger—Type of installation varies with mill.*

By WILLIAM T. HARDING, Jr.
Mechanical Equipment Co., Charlotte, N. C.

INSTALLATIONS of heat-exchange units in southern mills are producing annual savings of 70 to 90% of the equipment investment. The heat exchangers utilize the heat in waste process waters to preheat fresh water for other uses. Subsequent studies in mills using the equipment have also brought out operational procedures that effect large savings in time and materials in addition to the heat units reclaimed.

In many textile-finishing plants, heat that is generated in the plant from coal, wood, gas, or oil is dissipated either to the outside atmosphere in the form of fog or vapor, or the heat goes down the sewer in spent waste solutions.

Where there is no possible contamination of the condensate formed when the steam condenses, the greatest heat conservation is derived from use of this condensate for boiler-feed purposes. Condensate from dry cans, air dryers, unit heaters, and similar equipment can and should be used for this purpose. Every B.t.u. thus returned to the boiler reduces the B.t.u.'s that must be generated from the fuel.

Where contamination of the condensate is a possibility, it is better to waste the condensate rather than to take a chance of causing complications in the boiler. Such instances in textile finishing occur in kier operations where caustic from the kier solutions might get into the condensate because of a leaky kier heater. This is also true when steam is mixed with liquors to raise the temperatures of the liquors. The condensate is absorbed by the liquors and cannot be used for boiler-feed purposes.

Possible uses for the heat contained in the hot, spent solutions emanating from textile-finishing plants have in the past received very little attention. It is true that contamination with dye, lint, dirt, and chemicals has created physical problems which in the past have made these liquors unsuitable for any use. The maintenance necessary has made the possibility of heat reclamation questionable. The dyes and chemicals contained have presented corrosive problems that have taxed the ingenuity of all concerned with the problem.

EQUIPMENT NEEDED. In a study of the possibility of conserving waste in this field, it was found that no packaged unit exists that will solve the waste-heat problems of all textile-finishing plants. Variations in the processes for plants doing the same general work make equipment de-

signed for one plant unfit for use in another plant.

Briefly, it can be said that there are two general types of processes using and wasting hot liquors from which sufficient heat can be extracted or exchanged to make the investment worth while.

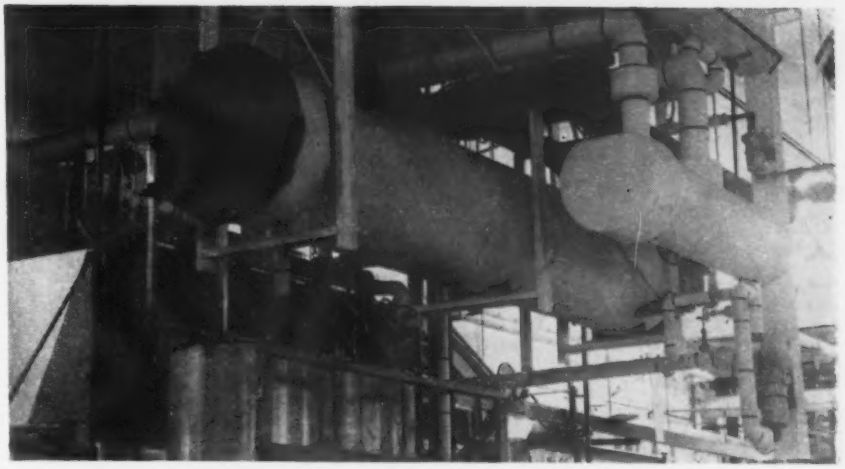
The first is what is referred to as batch dumps such as experienced in the operation of kiers, package and beam dyeing, etc. The study of these processes and the application of the proper heat-reclamation equipment requires much time and thought. The changes that take place in the processes from time to time often make a recommended installation for one set of conditions much more efficient or practically useless for the new set of conditions. Generally, the installation of waste-heat equipment to the intermittent-dump processes is not advisable unless the processes are firmly established and the cycles of operation assured.

The second type of operation is that of continuous flow. Here the study is much more easily made and the results are more definitely established. For instance, assume a washer that requires 100 g.p.m. of hot water at 200° F. The washer also overflows 100 g.p.m. of hot waste at say 190° F. This hot waste can be put through a heat exchanger and cooled to a predetermined temperature by heating the fresh water on its way to the washer.

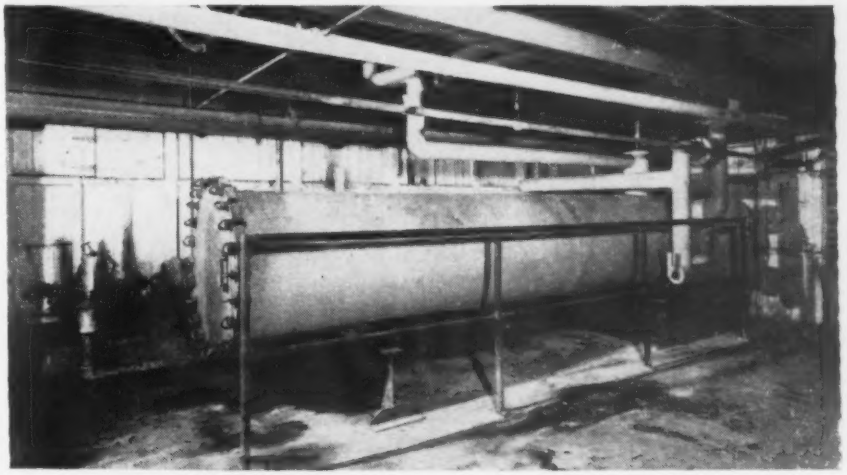
APPLICATION. It has been established that this is a practical application of heat-exchange equipment. In addition to the saving in steam necessary for heating the hot fresh water, it has also been found that the temperature of the fresh water going to the washer can be controlled, and the condensate from the steam used to boost the temperature of fresh water can be used for boiler feed water. Where boiler feed has to be chemically treated, this is a distinct advantage.

The application of the equipment depends on the local conditions involved. In some instances, the heat-reclamation unit is housed in a storage tank. In others, it is a separate unit with no storage involved. Sometimes both the waste and the fresh water have to be pumped. In other cases neither has to be pumped.

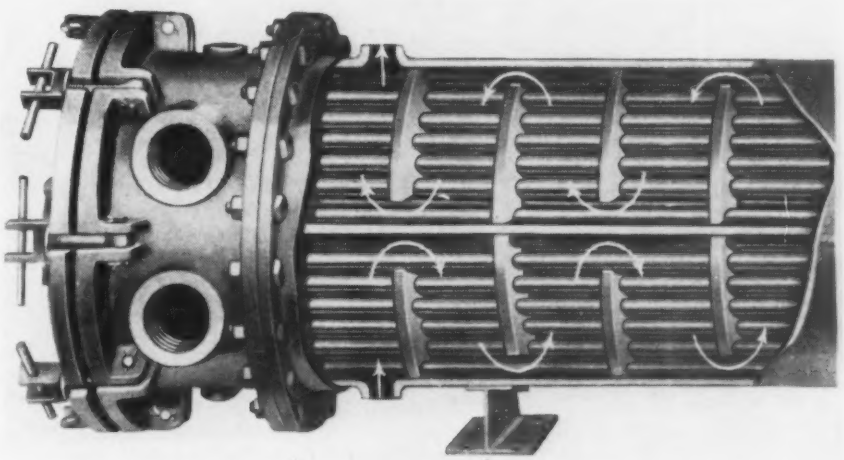
In the accompanying illustration of an installation at Pepperell Mfg. Co., Pepperell, Ala., a heat exchanger is shown suspended from the ceiling. This is a typical installation in which the waste is pumped through the heat exchanger by stainless-steel sump pumps. The fresh water in this instance is not pumped but flows under static pressure from an elevated tank.



Fresh water going to continuous dye range is preheated by spent wash water in this heat exchanger suspended from the ceiling at Pepperell Mfg. Co., Pepperell, Ala.



Hot waste liquor from caustic washers after mercerizers preheats incoming water in this exchanger installed at Union Bleachery, Greenville, S. C.

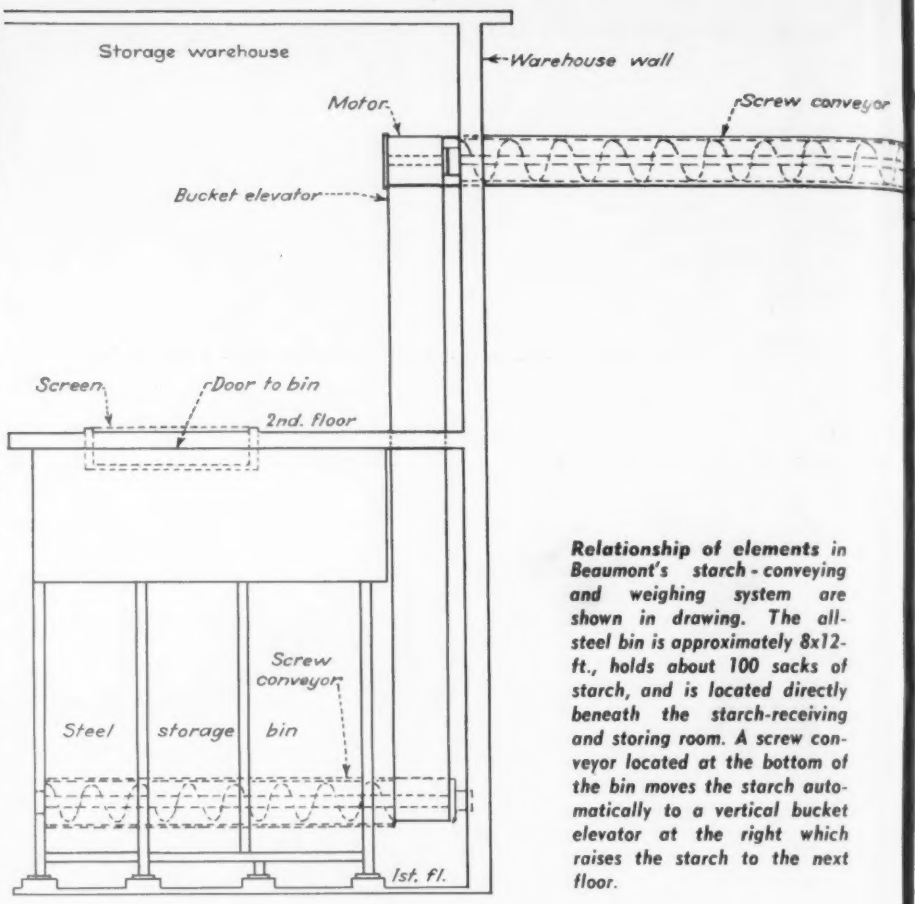


Internal construction of heat exchanger is shown in this cutaway view.

The booster heater is an instantaneous type of heater which uses steam in the shell to boost the temperatures to the desired level. This heater is mounted alongside the heat exchanger.

In another installation, at Union Bleachery, Greenville, S. C., the heat exchanger is mounted on steel beams on the floor. The fresh water is pumped, and the waste water is handled by gravity from the washers located above the heat exchanger. The instant heater for this exchanger is located near the ceiling of the floor above, close to the washers that it is serving.

Handling starch is greatly simplified at Beaumont Mfg. Co., Spartanburg, S. C., by the use of an automatic starch-control system. The 200-lb. sacks of starch are received and stored in a warehouse. Here the sacks stay, never going into the mill in that form to interfere with general production traffic or to complicate mill housekeeping. The warehouse operator (shown) lifts the sack from the nearby stack, opens it, pours the starch through the trap-door which leads to the starch bin on the floor beneath. Note the sifter screen to protect the pit.



***Relationship of elements** in Beaumont's starch-conveying and weighing system are shown in drawing. The all-steel bin is approximately 8x12-ft., holds about 100 sacks of starch, and is located directly beneath the starch-receiving and storing room. A screw conveyor located at the bottom of the bin moves the starch automatically to a vertical bucket elevator at the right which raises the starch to the next floor.*

Beaumont Has Automatic STARCH CONTROL

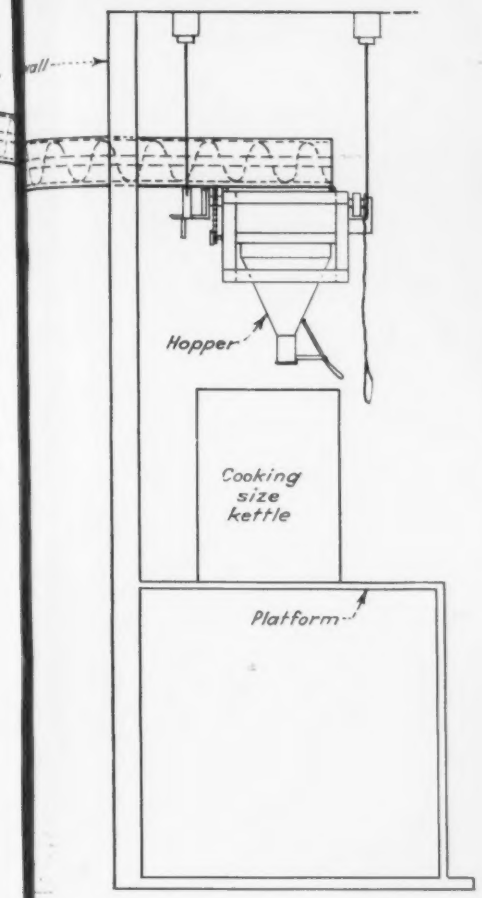
***HIGHLIGHTS:** Feeding starch by conveyor from warehouse to slasher room reduces mixing time from 20 to 1 min.—An 8x12-ft. steel bin holds starch—Mercury switch controls delivery and weight of material to hopper in slasher room—A 50-ft. screw conveyor connects warehouse and mill.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

TWO MEN formerly moved, lifted, and mixed sacks of starch in the large slasher room of Beaumont Mfg. Co., Spartanburg, S. C. The job once took 15 to 20 min. per kettle batch. Now, one man handles and dumps a kettle of starch in a minute or so, without his lifting a single sack of starch; and, more important, without having to call on the occasional help of a skilled slasher operator in lifting sacks of starch. This before-and-after contrast is the substance of Beaumont's story of a unique and fully automatic starch-control and handling system. The details of its operation are shown in accompanying photographs and plan.

The contrast in time and the elimination of fatigue and labor are not the whole story, however. Beaumont formerly hauled the starch from the storage warehouse to the slasher room; and, like most other mills, opened the sacks and weighed and mixed the size in the slasher room. Mill elevators were frequently tied up by starch haulers when transportation was needed for yarn or cloth. Despite special care in handling the sacks, some sacks broke open, and starch was spilled and unavoidably wasted. Spilled starch left "snow trails" on the floor, and its dust presented a cleaning problem around machines which perform important technical functions in the mill. As with all special-hauling operations, starch handling in the mill interfered with normal mill production and traffic.

Beaumont realized the necessity for a fool-proof and accurate mechanical system which would eliminate the disadvantages of the conventional mill method of starch handling and control. The new starch-control system is among the first in the country, and was tailored specifically to that mill's needs. Accurate weighing of size; standard, uniform batches; the elimination of human calculation, counting, and weighing of the mix were all fac-



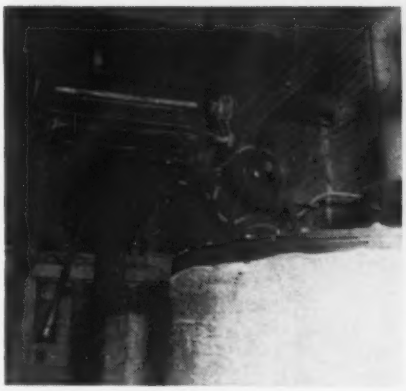
tors which influenced the engineering of the methods applied.

There were also problems in materials handling and transportation to solve. Beaumont's storage warehouse was approximately 50 ft. from the slasher room, requiring a screw conveyor (the type used by cotton gins) which would penetrate the outside wall of the warehouse, cross the 45 ft. or more of open-air space which separates the buildings, and enter the mill wall at a point adjacent to the kettles. By using a 2½ hp. motor driving the Continental Gin screw conveyor, the mill combined materials handling and starch control in one system.

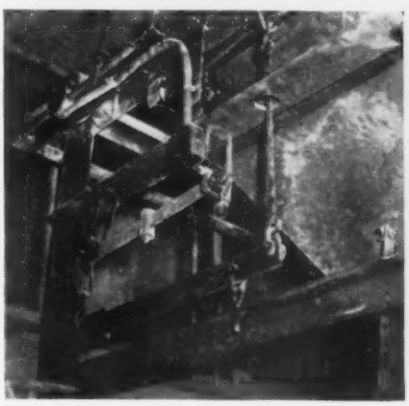
The warehouse has two floors which are used in a two-floor system of receiving and storing starch as outlined in the photographic highlights. The starch is brought from the railroad siding to the second floor, the sacks are opened, and the starch is poured through a door in the floor to an 8x12-ft. steel bin constructed on the first floor. By means of a screw conveyor in the bottom of the bin, a vertical bucket conveyor, and a second screw conveyor running from the warehouse to the mill, Beaumont solved the problem of starch transportation.

Automatically weighed in the slasher-room hopper, the starch is held there until the kettles need refilling.

***Closeup** is here shown of the junction of the vertical bucket conveyor and the second horizontal screw conveyor. Bucket elevator brings starch from the storage bin, deposits it on the screw conveyor which penetrates the warehouse wall, crosses about 45 ft. of terrain to the outside mill wall, and enters the mill at a point above the slasher cooking kettles.*

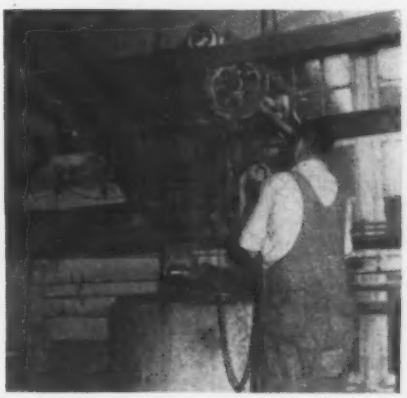


***Conveying starch** mechanically to the cooking kettles contrasts greatly with the traditional method of hand conveying. At this point of entry into the mill for the screw conveyor (the type used by cotton gins), the Beaumont Mfg. Co. has erected a superstructure of tracks with a moveable starch hopper. The latter is chain-drawn by the operator to the desired cooking kettle.*



***Automatic mercury-controlled scales** are built into Beaumont's starch hopper assembly to replace manual weighing. Switch controls the feed by conveyor from starch bin, operates only when there is room for additional starch in the hopper. Weight of starch in hopper thus remains constant.*

***Starting the hopper** is almost effortless. Kettle operator merely pulls on chain which moves hopper along the overhead track.*



***Mobile selectivity** is a necessity in mechanical starch-control systems, and here Beaumont's operator demonstrates how the mechanized hopper serves a battery of cooking kettles. He passed up the first kettle, because it needs no more starch, and is proceeding to the second kettle which is ready for another batch. Note the view of the chain-powered rolls above and the side view of the track mounting devices.*

***Starch delivery** to kettle in less than one minute is the record made by Beaumont's operator, as opposed to the usual 15 to 20 min. required by conventional starch handling. Note that operator pulls on delivery level to raise lid from hopper snout. To complete the cycle, operator returns the hopper to its original station; and because the hopper has room for more starch, the mercury switch again calls for starch from the conveyor.*

A New Deal "In the Cards"

SUN TEXTILE PROCESSING AID...

Cuts Down "Fly" in Asbestos Mill, Improves Spinning Qualities, Increases Yield of Finished Yarn

A big asbestos mill was plagued by excessive "fly" from its high-speed carding machines. The "fly" was not only a waste but also a definite health-hazard. It got into machines and settled about the mill, impeding operating efficiency and making for dirty working conditions.

A Sun Engineer was consulted. He recommended a processing oil specially refined for asbestos fibres. A quantity of this oil equal to ¾ of 1% of the weight of the asbestos fibre blend was applied at the blending pickers and tested for one year.

"Fly" has been almost entirely eliminated. The treated fibres are easier to spin, and net yield of finished yarns is greater. In addition, the expense of keeping the mill clean has been reduced, and the health-hazard has been overcome.

Sun "Job Proved" processing aids and textile machine lubricants are achieving records like this in scores of big mills. For full information call your nearest Sun Office. Or write Department T-4.

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SUN

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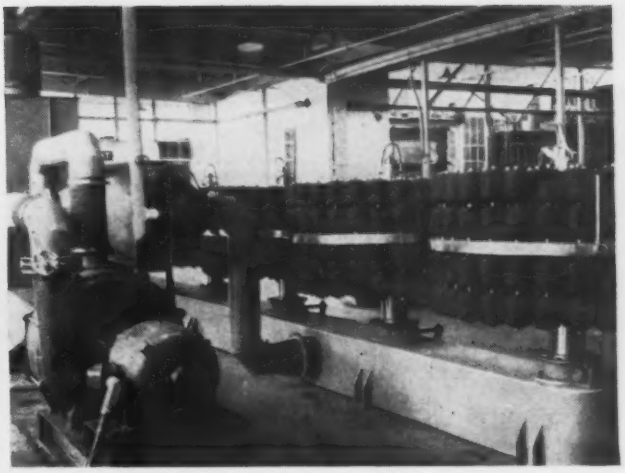
INDUSTRIAL PRODUCTS

Three dyeing machines installed by Avondale Mills replace four previously used.



Drying machines utilize a flow of hot air from the inside out.

Avondale Re-equips for PACKAGE DYEING

HIGHLIGHTS: *New package dyeing and drying equipment at Avondale Mills, Sylacauga, Ala., features easy handling of yarn—Hot-air drying duplicates "inside-out" flow of dye liquor—Extracting and drying time reduced from 24 hr. to 8 hr.*

By M. T. BARNHILL
Superintendent of Dyeing, Avondale Mills

NEW PACKAGE DYEING and drying equipment now in operation at Eva Jane Mill, of Avondale Mills, Sylacauga, Ala., includes two completely automatic dyeing machines, hot-air drying units, and facilities for mechanically handling the yarn.

Each of the dyeing machines has a capacity of 500 lb., or 400 packages weighing 1¼ lb. each. The yarn is wound on standard tubes of ⅝-in. diameter. When fully wound, each yarn package measures approximately 5½ in. in diameter and 6 in. in length. The range of yarn numbers dyed at present is from 7s to 30s.

The dyeing and drying equipment, manufactured by Smith, Drum & Co., features the "Center Manifold" yarn carrier (seen in the loading stage at the dyeing machine at the left in the left-hand photograph). Natural yarn is loaded on the spindles of this stainless-steel yarn carrier outside the machine. It remains on the carrier during dyeing, extracting, and drying.

Handling is done with a Robbins & Myers two-ton overhead electric-crane hoist, which engages only the yarn carrier. The loaded carrier is lifted by the hoist, conveyed by overhead rail to the machine, and lowered into the machine. Thus, the yarn itself is not handled until the end of the drying process. This method of handling aids in keeping the yarn clean and also reduces the cost of handling. The cleaner yarn results in a better dyeing job, particularly in pastel shades.

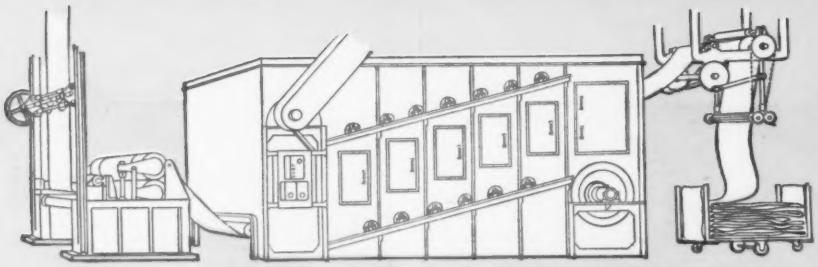
AUTOMATIC CONTROLS. Controls for the dyeing process include temperature, pressure, time, and direction of flow of the dye liquor. By throwing an electric switch to disconnect the automatic flow control, the flow-reversing valve can be operated by hand. Lights on the control panel (shown in the background to the right of the dyeing machine) indicate whether the direction of flow at that particular time is outside-in or inside-out.

Extracting is done in a pressure-extractor system, which is furnished compressed air by a 60-hp. blower. When the dyed-yarn packages are ready to be dried, the Center Manifold carrier is conveyed to one of the blower-drying units shown in the right-hand photograph. Avondale has two dryers of this type, each dryer having four drying ports to accommodate four carriers of yarn. A total of 3,200 packages can be dried simultaneously.

Air for the dryers is heated to approximately 210° F. and cleaned with Westinghouse precipitron units to avoid soiling bleach-base shades. The heated air is blown through the air ports and enters the yarn package in a manner similar to the inside-out flow of the dye liquor.

In addition to using all types of dyestuffs in the new equipment, bleaching agents can also be used. At Avondale, a liquid-brine system and an outside water tank that provides an adequate supply of water controlled at about 160° F. are used to aid dyeing.

While the total dyeing time varies with the type of dyeing, Avondale is now extracting and drying yarn in about 8 hr. Previously in old-type dryers, the drying time was often as much as 24 hr. All yarn was formerly wound on springs for dyeing and had to be extracted in centrifugal extractors and loaded on racks package-by-package prior to drying. These labor-consuming operations have now been eliminated.



In the first section of the Butterworth Continuous Dyeing Range, goods enter a 2-roll padder in which the color is applied in pigment form, followed by drying on a special type air dryer.

Cut Dyeing Costs on Vats and Sulphurs

Get ready to sharpen your pencil and refigure your dyeing costs on vats and sulphurs. Here are facts about the Butterworth Continuous Dyeing Range based on actual mill installations.

Butterworth Pad Steam Range Vs. Jig Dyeing

1/3 Floor Space

Complete pad steam range requires space only 110 x 10 feet to run 6,000 yards per hour. To produce same yardage by jig method requires 3,250 sq. ft. of floor space for vat colors, 2,800 sq. ft. for sulphurs.

2/5 Labor Cost

Pad steam range requires crew of four men plus part-time color weigher and mixer—36 man hours on 8-hour shift. To produce same yardage on vat colors by jig method requires 100 man hours on 8-hour shift . . . 88 man hours on sulphurs.

Savings on Chemicals, Dyestuffs

Chemical costs are cut an average of 40% with the pad steam range. Color costs are equal, or up to 25% less on certain classes of goods. In addition you save the cost of jig leaders . . . get better output because there are no jig ends to trim back.

It takes only two pads, a hot flue dryer, a steamer and a compartment washer to give you a complete 2-stage range for both vat and sulphur colors. Compare this with 24 jigs required to produce an equivalent yardage on jig work . . . plus roll benches for storage and in the case of vat colors a pigment padder. For a comparison of pad steam vs. jig work, see figures at left.

If you are doing *conventional* continuous reduced or pigment work, consider these facts. The Butterworth pad steam range will cut your costs from 10% to 35% on both vat and sulphur colors. On vat colors you will get deep shades which formerly required the use of jigs. On sulphurs, pad steam dyeing gives full jig money value and fastness, and shading is controlled throughout the run.

For complete facts on Butterworth Continuous Dyeing Systems, write us today.

Butterworth

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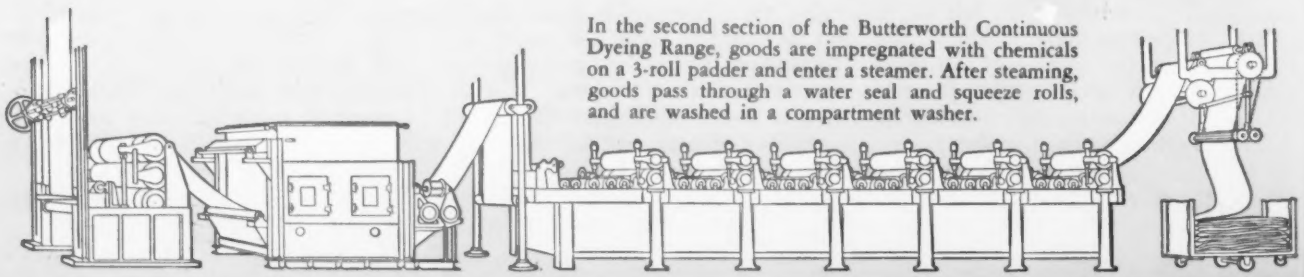
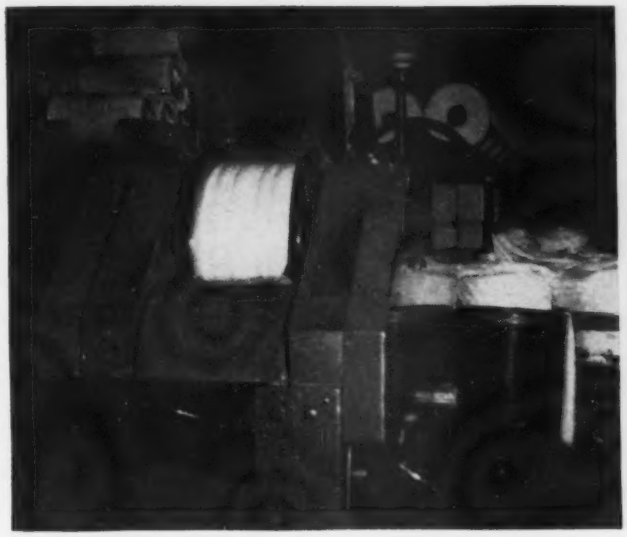
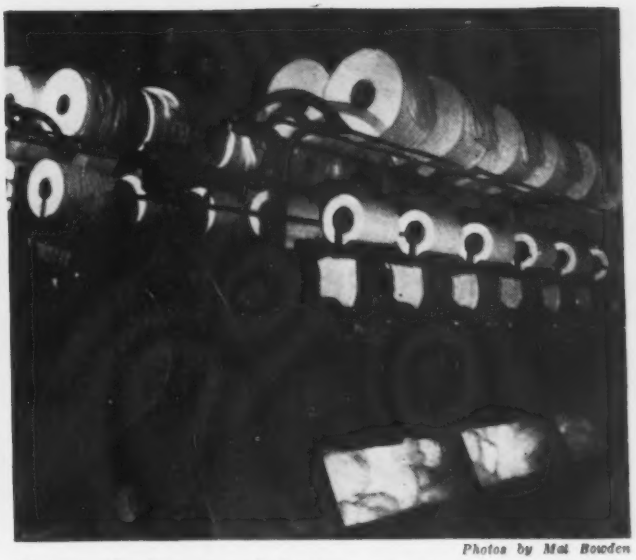


In the second section of the Butterworth Continuous Dyeing Range, goods are impregnated with chemicals on a 3-roll padder and enter a steamer. After steaming, goods pass through a water seal and squeeze rolls, and are washed in a compartment washer.



***Double-sided combs** produce 48 lb. per hr. at 100% efficiency. Machines are Saco-Lowell.*



Photos by Mal Bowden

***Unique blending** of combed cotton and rayon is done on Smyre's ribbon-lap machine shown here.*

Smyre Features COTTON-RAYON *Blends*

***HIGHLIGHTS:** New cards at Smyre Mfg. Co. produce 60-gr. cotton sliver and 80-gr. rayon sliver for blending at lap winder—Cotton combed at 48 lb. per hr. on double-sided comber—Eleven cans of combed cotton sliver and five cans of rayon sliver are blended at lap machine for a 70/30 mix.*

By C. MALLARD BOWDEN, *Southern Editor, TEXTILE WORLD*

ALTHOUGH PLANNING its No. 3 Mill as an all-synthetic plant, Smyre Mfg. Co., Gastonia, N. C., considers the highly versatile equipment and methods of the No. 1 and No. 2 Mills as the mainsprings of its production effort. The new varied-fiber mill, plans for which are as yet incomplete, will contain specialized machines such as those for rayon. It will be the third arm of a production unit whose two arms already produce a variety of combed cotton-rayon blends on the machinery shown in the accompanying photographs.

Improved and new machinery, better manufacturing methods, and modified machine layouts have been or will be installed in the two existing Gastonia mills. New cards, combers, vacuum system, Pneumafil, winders, and other machines and devices have already been added; and Bahnson's Humiducts are being installed. The Smyre Mfg. Co. employee cafeteria—considered a model during last year's industrial-feeding clinics sponsored by the U. S. Department of Agriculture—still points the way toward better employee health and efficiency.

Any one of a large number of cotton-and-rayon blends could have been selected as an example of Smyre's products. The mill manufactures high-quality combed-cotton yarn, standard cotton-rayon blends, and all-rayon yarn in No. 1 and No. 2 Mills. The blend about to be described involves an effective method of preparing cotton to blend with rayon, and shows the interesting technique of combining the fibers at the lap machine. The greater strength of the resulting blend is the prime consideration behind this method. Quality is also improved, since the combing process eliminates, along with the short fibers, many of the impurities which, without combing, would remain in the cotton.

CARDING. Cards produce 8 lb. per hr. of 60-gr. card sliver which later will be combed and blended with rayon staple. Laps for the cards weigh 15.75 oz. per yd., contain 48 yd., for a total weight of 47.25 lb. Many of the Whitin cards are new, draft 112.96 on the cotton stock, and have 17-tooth production gears.

***Spinning frames** use Westinghouse lint-free motors and Allis-Chalmers vari-speed drives.*

The rayon staple that will be blended with the combed cotton—

(*Continued on page 200*)

when it comes to steel—

Our Business is YOUR Business

You can simplify steel purchasing for every food industry requirement with a call to your nearby Ryerson plant. We plan our stocks to meet your needs and, when it comes to steel, our business is your business.

For many Ryerson specialists have been working with the food industry and its equipment manufacturers—quickly supplying the right steel for every application. Now, during times of great demand, Ryerson stocks and Ryerson experience are especially helpful.

Whether your requirements are measured in pounds or tons, they receive the immediate attention of experienced steel men. And if the steel you need is not readily available from stock, Ryerson know-how goes to work. Often we can suggest a practical alternate steel.

So contact Ryerson when you need steel for new construction or maintenance. Let one order to Ryerson, one invoice and one shipment do the job; save you time and money.

Joseph T. Ryerson & Son, Inc. Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco.

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ALLEGHENY STAINLESS — Sheets, plates, bars, shapes, etc.

TUBING — Welded & seamless boiler tubes, mechanical tubing

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BARS—Carbon & alloy hot rolled & cold finished

STRUCTURALS — I beams, H beams, channels, angles, tees, zees

PLATES — Inland 4-way Floor Plate, etc.

RYERSON STEEL

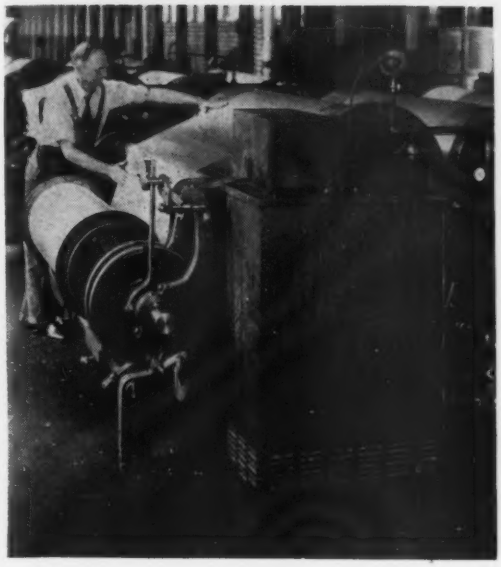


TABLE 1. Slasher-Size Formulas

	PMA		Ethylene glycol or glycerine		Sulphonated mineral oils		Water	
Formula No.	%	Lb. - oz.	%	Lb. - oz.	%	Lb. - oz.	%	Lb.
1	7	33-00	5	23-10			88	415
2	6	27-11	4	18-07			90	415
3	5	22-08	3	13-05			92	415
4	6	31-02	3	15-09	3	15-09	88	415

***Suggested formulas** above are good starting points for sizing raw nylon warps.*

PMA-sized warps, with normal pickup and proper drying, should retain 5% or more of size, depending on fabric to be woven.

Data Offered on RAW-NYLON WARP SIZE

***HIGHLIGHTS:** Du Pont PMA size successfully used on raw-nylon warps in weaving tests—Acidic nature requires thorough cleaning of all lines and kettles—Formulas and mixing instructions given—Modifications required to suit individual mill requirements.*

SIZING AND WEAVING of over 200 continuous-filament-nylon warps with Du Pont's new PMA size has produced considerable data of interest to mill men. The experiments, carried out in Du Pont's laboratory and in various mills, are said to have produced excellent results on satins, twills, and lenos made from continuous-filament nylon.

PMA (polymethacrylic acid) is formulated as a water-soluble, easily applied and removed, sizing material claimed to have excellent adhesion to raw nylon. When applied uniformly and in the proper amounts, PMA is said to practically eliminate shedding at the loom.

The size is used to best advantage when applied to raw nylon. Tests showed that adhesion of PMA to nylon is adversely affected by previous applications of PM-90 size or coning oil.

Condensed from Nylon Technical Service Bulletin, "Warp Sizing, Polymethacrylic Acid for Nylon Continuous Filament," E. I. du Pont de Nemours & Co., Wilmington 98, Del.

FORMULATION. In the performance tests, glycerine or ethylene glycol, alone or in combination with sulphonated mineral oils, has been used as a plasticizer. Several suggested formulations incorporating these plasticizers appear in Table I.

The formulas suggested are good starting points for any mill interested in trial runs of PMA. Formula No. 1 is suggested for use on heavy-sley taffeta warps, since it offers the greatest film strength and resistance to the continuous end-to-end abrasion. Present indications are that higher percentages of PMA are needed for higher-sley warps. Less protection is needed in satins and twills because of the lower end-to-end abrasion. Therefore, a lighter film of either 6% or 5% PMA is given.

Most oils evaluated to date for use with PMA are neither compatible nor completely miscible with it. However when handled correctly and used in size boxes with circulating systems to minimize separation, the oil tested in formula No. 4 has given excellent weaving and fabric quality.

Some polyhydric alcohols are compatible and miscible with PMA and give true solutions. While only ethylene glycol and glycerine are included in the suggested formulations, several other polyhydric alcohols (such as polyethylene glycol 600, diethylene glycol, propylene glycol, sorbitol, etc.) might be used with equal effectiveness.

Modification will undoubtedly be necessary to adapt any formulation to the warp construction, equipment, and method of operations of individual mills.

MIXING. No unusual difficulties are said to be involved in making up solutions since PMA is readily soluble in water. The total amount of water should first be placed in the size kettle. After agitation begins, the PMA should be poured slowly into the vortex of the solution, since rapid addition may cause lumping of the size and require longer agitation. During this agitation, the temperature of the solution can be raised slowly to hasten dissolution of any large lumps of PMA which may be formed because of too rapid addition. However, when a small mixing kettle is used, it may be advisable to maintain the solution at room temperature during agitation of the PMA since excessive foaming may result at an elevated temperature. After

(Continued on page 196)

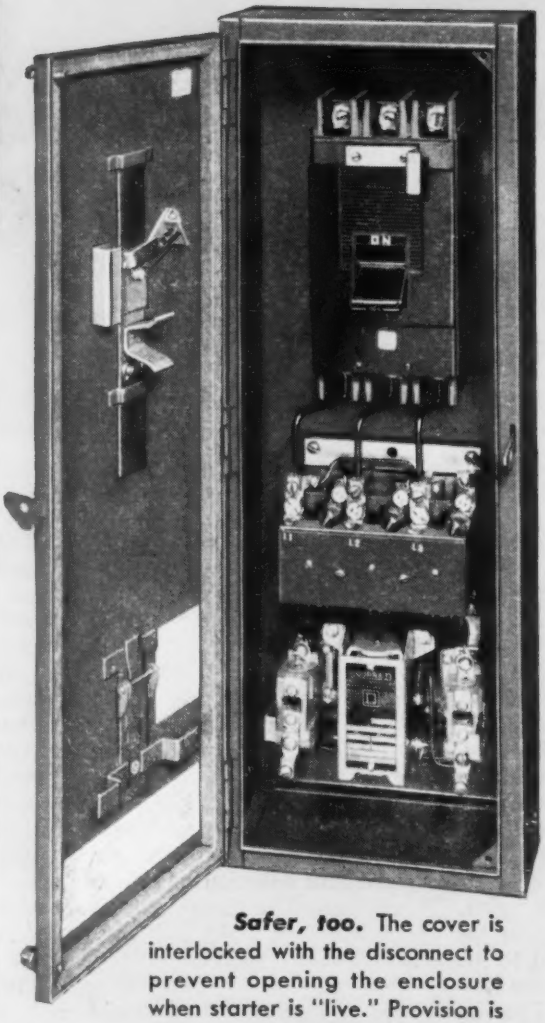
Square D Front-operated Combination Starters

SAVE TIME since the disconnect (switch or breaker) and the magnetic starter are housed in one enclosure. Mounting time is cut in half and wiring time is less.

SAVE SPACE by using one enclosure instead of two. Flat cover construction permits close "ganging" and additional space conservation.

Available in three sizes—O, I, and II for motors rated up to 2, 7½ and 25 HP, respectively. Larger sizes are side-operated.

Write **SQUARE D COMPANY, 4041 N. Richards St., Milwaukee 12, Wisconsin, for Bulletin 8538.**



Safer, too. The cover is interlocked with the disconnect to prevent opening the enclosure when starter is "live." Provision is also made for padlocking the disconnect in the "OFF" position.

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Happy faces greet the visitor at Grabur Mills, the 34,000-spindle throwing plant of May McEwen Kaiser Co. Top, left to right: Jack Burke opening cases of nylon; Ada Blackwell Rigsbee, winding; Louise Robinson, twisting; Joe Martin, bobbin trucker. Bottom: Oveida Gentry, sizing; Clyde Wlliams, steaming; Vera Pierce, cone winding; Pete Hargrove, shipping clerk; and Iver Fuqua, truck driver.

"FRIENDSHIP" Is Keynote At May McEwen Kaiser Co.

HIGHLIGHTS: *Personnel-Director Bourdelat says company has no "bosses"—Friendliness is based on character of workers, fairness in promotion, comfort in working conditions, and exchange of pleasant gossip through mill newspaper—Company, which now includes some eight plants, was founded by former principal of Burlington High School.*

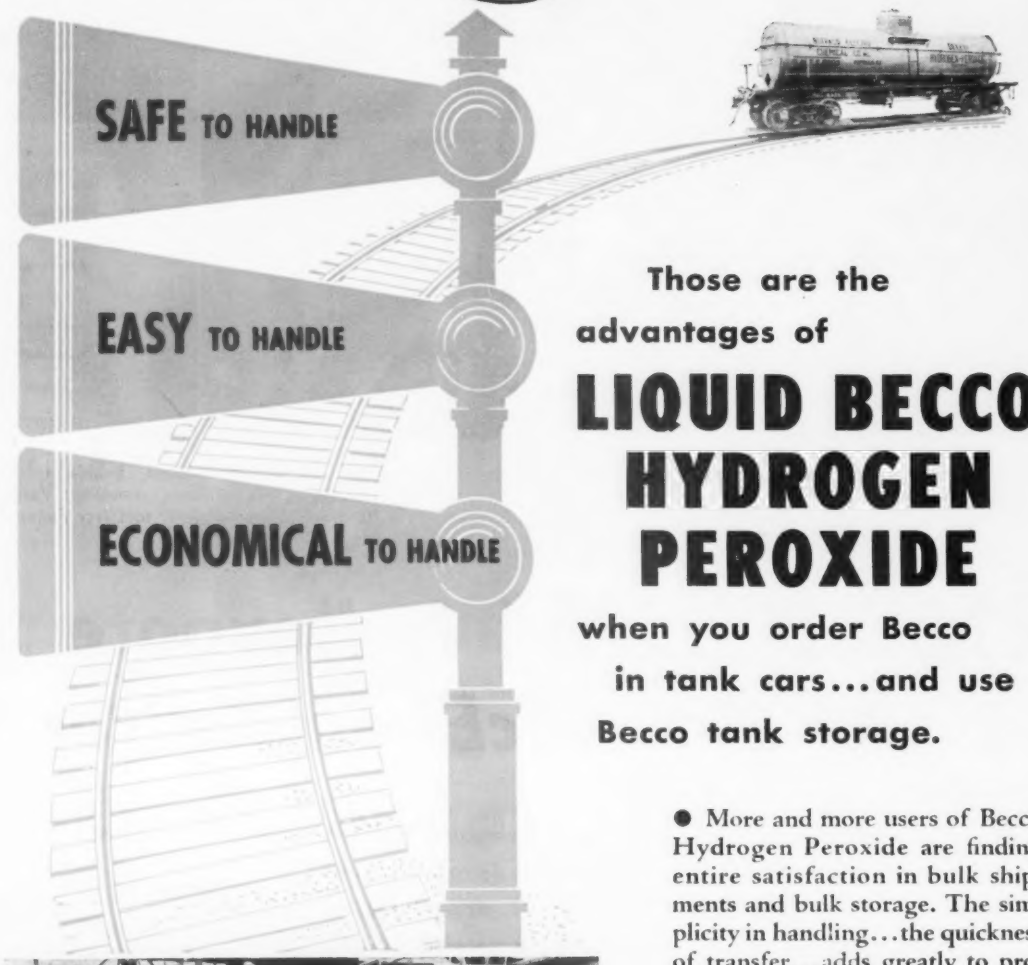
***Capable and intelligent** workers man the machine-shop of the May McEwen Kaiser finishing division. Left to right: G. Foster, Ben Clopp, Bun Clopp, G. M. Jones (foreman), and F. Stafford.*

By JOHN M. GREGORY

LABOR RELATIONS at the May McEwen Kaiser Co. mills in North Carolina and Alabama have been pleasant for so many years that the company has no "bosses," and workers and management operate more on a basis of friendship than as employer and employee, according to George P. Bourdelat, personnel director.

The company owns and operates a finishing plant, the May, Sidney, and McEwen plants, and the seamless division in Burlington, N. C.; Grabur Silk Mills at Graham and Vance Knitting Co. at Kernsville, both in North Carolina; and Dothan Silk Hosiery Co. at Dothan, Ala. Normally these mills employ in all about 3,000 workers.

LIKE A BIG FAMILY. Many employees have been with the company 20 or more years. "Aunt Daisy," who recently resigned at the age of 73 yr., started work at the Sidney plant in 1889. Cora Walker, who has been 17 yr. with the company and has the record of eight consecutive years without missing a day, has two sons and her husband also employed by the company. The oldest worker at the May



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LIQUID BECCO HYDROGEN PEROXIDE

when you order Becco in tank cars... and use Becco tank storage.

● More and more users of Becco Hydrogen Peroxide are finding entire satisfaction in bulk shipments and bulk storage. The simplicity in handling... the quickness of transfer... adds greatly to production and subtracts substantially from costs. 40,000 lbs. in 1½ hours can be handled through the turning of a valve and the pushing of a button.

Becco's fleet of tank cars is the largest in the hydrogen peroxide industry. Becco's representatives will arrange and plan with you for the most efficient tank storage.

Write for complete information.

BECCO SALES CORPORATION

AGENTS FOR BUFFALO ELECTRO-CHEMICAL COMPANY, INC.

BUFFALO 7, NEW YORK

New York Boston Philadelphia Chicago Charlotte

***Health care** is in capable hands. Picture shows first-aid room, with Wiley Scott, RN, in charge.*

An expert inspector is Elna Blackwell, who has been with the company 15 yr. She has inspected 299 doz. pr. of stockings a day.

***Age has taken no toll here.** Roberta Kunz has been employed in the McEwen division for 20 1/2 yr. She is a looper.*

***For aesthetic enjoyment,** Maxine Dodson, clerical worker, operates the record player which supplies music to workers.*

***Charm begins right** at the editor's desk. Emily Joyner is editor of the "Cameo Reporter," employees' newspaper.*

finishing plant is colored Finley Judson, janitor, who started in 1917.

None of the plants is unionized; two elections for unions were beaten by large majorities, Mr. Bourdelat stated. He added that for employees like those in his company no hard and fast rules were necessary.

Employees work 40 hr. a week, with three daily shifts in the knitting mills. Notices to workers are posted on bulletin boards. An employee newspaper is issued every three weeks. The principal duty of the personnel director is to keep old friends and make new ones.

Wages are better than those prevailing in the knitting branch of the industry in the company's section, according to Mr. Bourdelat. The company pays for insurance, covering sickness, accident, disability, and life.

Promotion depends on ability and seniority. Foremen are constantly on the lookout for competent men to advance to fixers' and assistant-foremen's positions.

The promotion plan to select key men from the ranks is regarded as most important by the mill officials. Superintendents of three plants rose from knitters. Every foreman and fixer on the second and third shift started in the ranks.

Once a year, employees who have served 6 months to 5 yr. draw 2% vacation pay; 4% for those serving over 5 yr. The amount of wages varies according to speed and ability, as most employees are paid on a piece-work basis. For the last several years, employees have drawn yearly bonuses based on earnings.

Annual turnover of workers is low. The armed services in World War II took 450 from the company's plants. Seventeen are still in uniform, four were killed, only eight failed to rejoin the company.

Some of the workers are stockholders. Many own their own homes. A few are active in the town's civic endeavors, such as Ralph Henderson who is vice commander, Post 1920, Foreign Wars, and Frank Crotts, knitter, who was chosen an officer in the AMVETS.

The company encourages employees in social, church, and school activities. Its baseball team is a member of the Piedmont League, playing teams from mills in Winston-Salem, Asheboro, Siler City, High Point, and Thomasville. Softball teams from the company's mills play a series of games with each other. Many workers are enthusiastic golfers, playing in tournaments. Annual picnics are given at each plant.

FOR WORKERS' COMFORT. Employees work in air-conditioned, well-lighted rooms, with comfort a prime consideration. Loud-speakers bring music at certain hours of the day. A snack-bar at the entrance is provided, and bottles of cold drinks are taken through the work rooms for sale to workers.

Miss Mary Wiley Scott, R.N., a former lieutenant in the air-evacuation service, with experience in the Phillipines, Japan, and Shanghai, is in charge of the first-aid station next to the personnel-director's office.

(*Continued on page 216*)

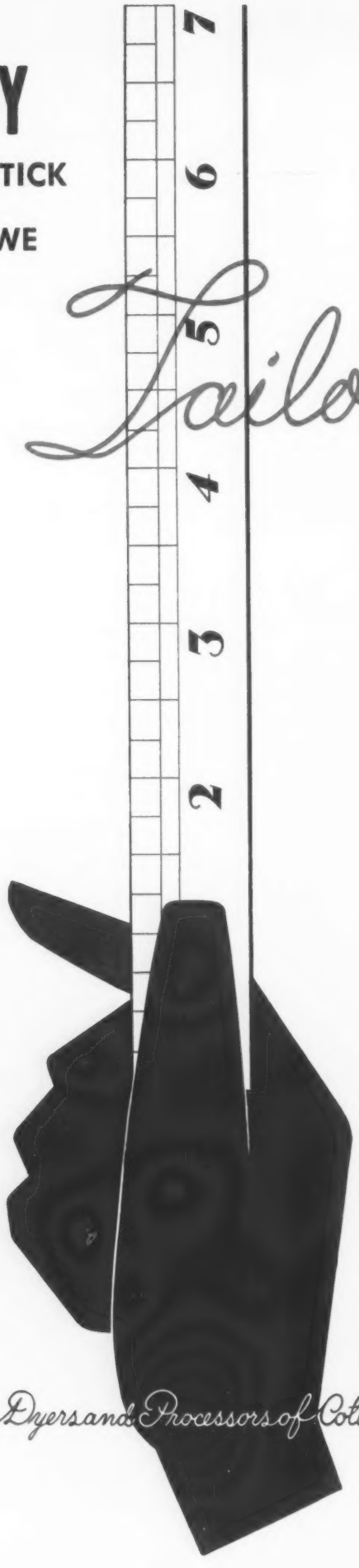
QUALITY

IS THE YARDSTICK

BY WHICH WE

MAKE

Tailored Color



And, according to you, *no finer yardstick could be used!*

The outstanding Quality of Florence Tailored Color yarn results from several factors.

First is the "Know-How" of our laboratory colorists in analyzing colors and developing them to your *exact* color request—*Tailored Color.*

Next is our ability to *control* this quality throughout—an instance being the maintenance of a private artesian well water system, tested daily, to provide uniform water, insuring uniform results.

To complete our processing service, we dye, bleach, wind and finish cotton, wool, synthetic and blended yarns.

Either you furnish the yarn to be processed, or, if possible, we obtain the quality you want and process according to your specifications.

Remember when you next order dyed yarn Florence Tailored Color gives you the shade, color-fastness and quality you require.

FOR TAILORED COLOR WRITE

FLORENCE THREAD CO., INC.

Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns

RIVERSIDE • NEW JERSEY

SHOW IN 1950 Planned By Textile-Machinery Association

HIGHLIGHTS: *Atlantic City chosen for exhibition of textile-mill equipment and supplies—Will be first postwar show approved by association—Leeson, Bolton, Rockwell, and Dewhurst elected to office.*

ERWIN N. DARRIN is chairman of exhibition committee.

AN EXHIBITION of textile-mill equipment and supplies, to be known officially as "The American Textile Machinery Exhibition (and associated industries)," has been scheduled for the Atlantic City Auditorium, Atlantic City, N. J., May 8 to 12 inclusive, 1950. It will be under the management of Campbell-Fairbanks Expositions, Inc., 929 Park Square Bldg., Boston, Mass., of which Albert C. Rau is vice president and general manager, and will be sponsored and supported by the National Association of Textile Machinery Manufacturers. This is the first postwar exhibition to be approved by the association.

The exhibition committee of the association is headed by Erwin N. Darrin, vice president of Draper Corp., Hopedale, Mass., as chairman. Other members are J. Hugh Bolton, president of Whitin Machine Works, Whitinsville, Mass.; Frederick W. Howe, Jr., vice president of Crompton & Knowles Loom Works, Worcester, Mass.; W. Frank Lowell, vice president of Saco-Lowell Shops, Boston, Mass.; Winthrop S. Warren, sales manager of Universal Winding Co., Providence, R. I.; W. H. Rometsch, Jr., secretary and treasurer of Fletcher Works, Philadelphia, Pa.; R. G. Ross, sales manager of the textile division of Barber-Colman Co., Rockford, Ill.; and Edgar A. Terrell, president of The Terrell Co., Charlotte, N. C.

HOTEL ACCOMMODATIONS. Atlantic City was selected as the site not only because of its large exhibition hall but also because of its ample hotel accommodations. Several textile manufacturers' associations may hold their annual conventions in Atlantic City at the time of the exhibition.

The Campbell-Fairbanks organization has long been identified with textile-equipment-and-supply exhibitions. It managed the International Textile Exposition held at intervals in Boston up to and including 1930. It has always had charge of the Knitting Arts Exhibition.

Applications for space at the 1950 textile show are acceptable from both members of the machinery association and non-members. Many manufacturers of chemicals and other supplies are likely to take part, it is believed.

OFFICERS ELECTED. At the time that the National Association of Textile Machinery Manufacturers announced its sponsorship of the Atlantic City show, it also announced its election of officers for the current year, as follows: The new president is Robert Leeson, president of Universal Winding Co., Providence, R. I., who succeeds Thomas H. West, president of Draper Corp., as head of the association. J. Hugh Bolton, president of Whitin Machine Works, is now vice president of the association; Samuel F. Rockwell, treasurer of Davis & Furber Machine Co., North Andover, Mass., treasurer; Theodore Dewhurst, of Universal Winding Co., secretary.

ROBERT LEESON is new president of machinery association.

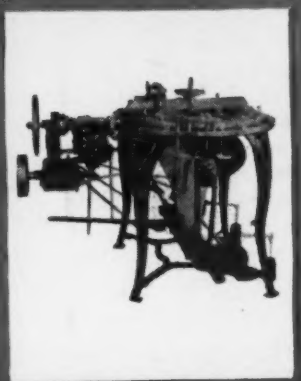
J. HUGH BOLTON was elected vice president.

SAMUEL F. ROCKWELL was chosen treasurer.

The National Association of Textile Machinery Manufacturers has also released its current membership list. Following are the member firms, in each case followed by the name of the chief representative active in association affairs, where one has been selected:

Abington Textile Machinery Works, Boston, Mass.—Sumner Smith
Barber-Colman Co., Rockford, Ill.—R. G. Ross
E. V. Bates & Co., Lowell, Mass.—Frank Webb
Birch Brothers, Inc., Somerville, Mass.—Harold Birch
G. L. Brownell, Inc., Worcester, Mass.—Carl R. Brownell
H. W. Butterworth & Sons Co., Philadelphia, Pa.—Harry W. Butterworth, Jr.
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.—H. E. Johnston
Cocker Machine & Foundry Co., Gastonia, N. C.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.—H. S. Favor
Crompton & Knowles Loom Works, Worcester, Mass.—Rufus Frost
Curtis & Marble Machine Co., Worcester, Mass.—Charles F. Marble
Davis & Furber Machine Co., North Andover, Mass.—Samuel F. Rockwell
Draper Corp., Hopedale, Mass.—Thomas H. West
Duke Machine Co., Inc., Salem, Mass.—Harry Duke
Fabric Machine Co., Bridgeport, Conn.—A. D. Sullivan
Foster Machine Co., Westfield, Mass.—E. C. Connor
Fletcher Works, Inc., Philadelphia, Pa.—W. H. Rometsch, Jr.
David Gessner Co., Worcester, Mass.—John P. Franklin
H & B American Machine Co., Pawtucket, R. I.—W. A. Sipprell
George S. Harwood & Son, Worcester, Mass.—Sidney Harwood
Haskell-Dawes Machine Co., Inc., Philadelphia, Pa.
Hermas Machine Co., Inc., Hawthorn, N. J.—George H. Mason
James Hunter Machine Co., North Adams, Mass.—Lee Sherman Cass
Hussong-Walker-Davis Co., Philadelphia, Pa.—J. Harry Thompson
Johnson & Bassett, Inc., Worcester, Mass.—Chester E. Williams
Charles B. Johnson, Paterson, N. J.—William Johnson
Knowlton & Newton Co., Lowell, Mass.—James L. Gillespie
F. A. Lazenby & Co., Inc., Baltimore, Md.—F. A. Lazenby
Marshall & Williams Mfg Co., Providence, R. I.—J. H. Williams
Parks-Cramer Co., Fitchburg, Mass—Maynard Ford
Proctor & Schwartz, Inc., Philadelphia, Pa.—T. W. Allen
Rice, Barton Corp., Worcester, Mass.—Stuart B. Dickerman
Riggs & Lombard, Inc., Lowell, Mass.—C. G. Lombard
B. S. Roy & Son Co., Worcester, Mass.—Duncan H. Dewar
Saco-Lowell Shops, Boston, Mass—W. Frank Lowell
C. G. Sargent's Sons Corp., Graniteville, Mass.
Shawmut Engineering Co., Boston, Mass.—E. F. Hathaway
James Smith & Son, Worcester, Mass.—William B. Smith
Smith, Drum & Co., Philadelphia, Pa.—Harry S. Drum
Universal Winding Co., Providence, R. I.—Robert Leeson
Winsor & Jerauld Co., Providence, R. I.—F. C. Lawton
Whitin Machine Works, Whitinsville, Mass.—J. Hugh Bolton
J. E. Windle Co., North Grafton, Mass.—J. E. Windle

KNIT GOODS BY *Leighton*



The full automatic Transfer Machine is the most versatile knitting machine made for sweater fabrics. The big roomy dial outside the knitting point makes it possible to knit soft spun yarn with less end breakage. Custom built with multiple feeds, two speed control, two and three color stripe and with Brushing Attachments for brushing garments as they are knit. Machines built in all sizes.

LEIGHTON MACHINE COMPANY
ESTABLISHED—1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE
INCORPORATED—1894

Loopers given special vision attention can produce more, according to Purdue University experiment.

Inspection department is recommended as a place to start a vision program.

VISUAL TESTS Can Fit Employees to Jobs

HIGHLIGHTS: *Attention to vision upped looper production 10%—Estimated that 52% of textile workers have visual problems—More testing than just letter chart needed —Start program with inspectors.*

By Dr. WILLIAM C. EZELL
Spartanburg, S. C.

Much more testing *than just the Snellen letter-chart test is needed to fit workers visually to their jobs.*

NUMEROUS STUDIES of employee vision show that it is closely related to both quantity and quality of output in the textile industry.

In a hosiery mill, beginning loopers were given special attention to adapt their vision to their jobs, as a part of extensive experimentation carried on by Purdue University. After a few months, to allow time for learning the intricate operation, the group receiving special attention was producing 10% more than fellow employees.

At a plant of the American Viscose Corp., female employees making final inspections of cones of rayon yarn were given a series of visual tests based on requirements for that particular job. It was found that 35.6% of the inspectors failed three or more of the tests given, and of these only 6.7% achieved job performances above standard, based on quality and quantity.

In another study it was found that 37% of all spoiled work was due to inefficient vision.

Leo M. Mayer, Inspector of Optometry for the State of New York, has estimated that 52% of all textile workers have visual problems which need professional attention.

At Cheney Bros., the medical director estimated that inefficient vision "runs perhaps as high as 75% in old employees and at least 25% in new employees."

Fortunately, all but about 2% can have their visual inefficiencies corrected by professional attention. Inefficient vision does not need to handicap job performance.

Vision specialists and industrial companies have had sufficient experience with vision programs to provide a pattern which almost any company can follow to raise vision standards. The major steps are:

1. Examination of vision of employees by a professional practitioner
2. Correction of visual inefficiencies by glasses or visual training, and referral for medical care where pathology is found
3. Classification of jobs from the standpoint of visual requirements
4. Matching employees to jobs.

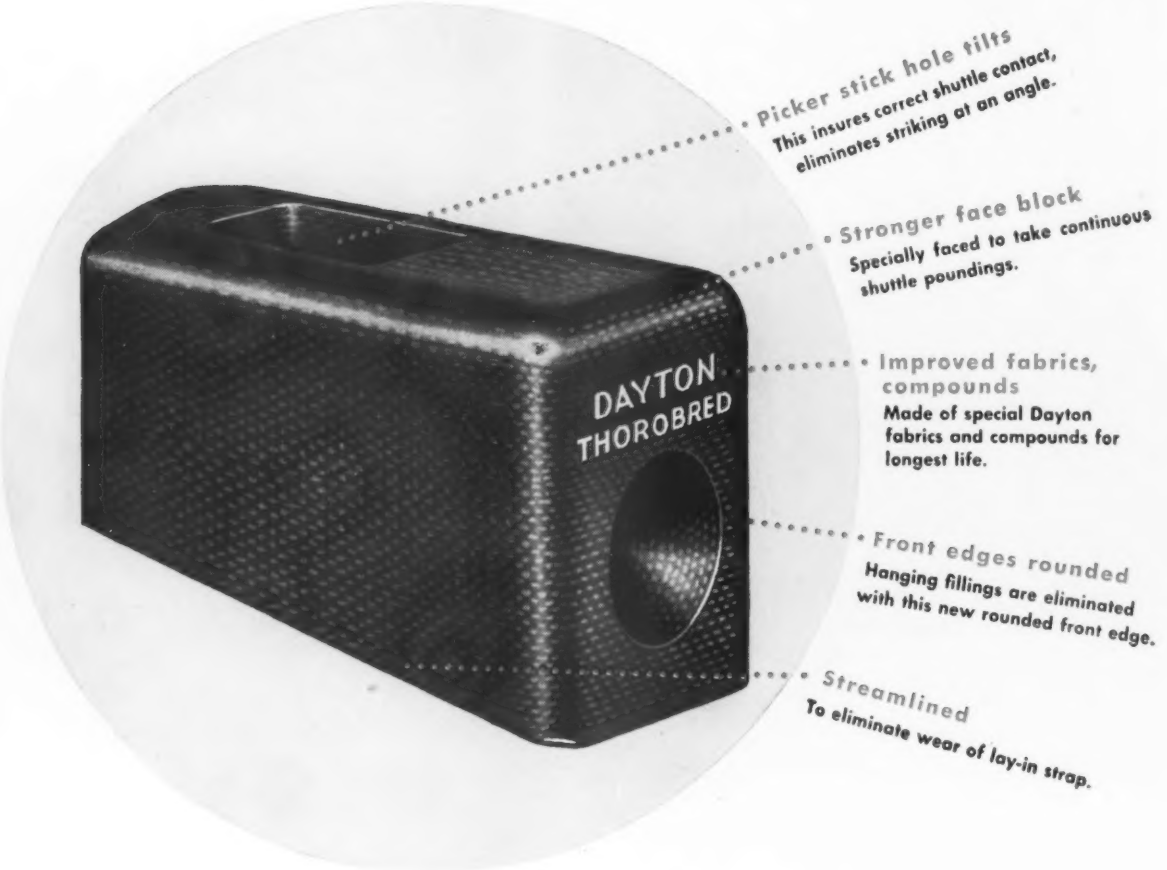
VISUAL TESTS. Comprehensive visual examinations cover many technical points, but the following skills

(*Continued on page 202*)

Dr. Ezell is a past president of the American Optometric Association.

Reduce maintenance costs . . . get better service from this

NEW *improved* PICKER


DAYTON
THOROBRED
Picker stick hole tilts
This insures correct shuttle contact, eliminates striking at an angle.
Stronger face block
Specially faced to take continuous shuttle poundings.
Improved fabrics, compounds
Made of special Dayton fabrics and compounds for longest life.
Front edges rounded
Hanging fillings are eliminated with this new rounded front edge.
Streamlined
To eliminate wear of lay-in strap.

On today's fastest looms, Dayton Thorobred **Loop Pickers** perform with highest efficiency at less cost. Made of special fabrics and synthetic rubber compounded with unusual resilience, Dayton Pickers are molded in one-piece, super-strong units that give increased service, longer life. Designed with a flared bottom, Dayton Pickers are built for easy application. There is nothing to break, nothing to expand. Their design includes a specially patented symmetrical loop construction which anchors the picker onto the stick and holds it in the correct contact position indefinitely. If you aren't using Dayton Pickers, it will pay you to get the complete story. Write Dayton Rubber, Dayton, Ohio, or *Textile Division—Main Sales Office, Woodside Bldg., Greenville, South Carolina.*

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Table I. Summary of Analyses[1] of Cotton Print Cloths Showing Fabric Changes and Residual Materials After Three Methods of Bleaching

Treatment	Alcohol Solubility	Wax	Ash	Cellulose	Breaking Strengths		Weight	Fluidity C=0.5g/100 ml. G=500 Sec^{-1}	Reflectance
					Warp	Filling			Whiteness MgO=1.00
	Percent[2]	Percent[2]	Percent[2]	Percent[2]	Pounds	Pounds	oz./sq. yd.	Rhes	
Hypochlorite Bleaches									
Control	1.98	1.02	1.27	91.22	47.1	27.4	2.77	2.11	0.270
Desized	1.16	1.08	0.25	93.12	43.2	24.8	2.70	2.29	0.377
Kier Boiled	0.48	0.45	0.22	98.25	42.8	24.5	2.60	2.81	0.702
Bleached	0.39	0.39	0.03	98.93	42.9	24.8	2.46	5.91	0.809
Peroxide Kier Bleaches									
Control	1.98	1.00	1.24	92.08	46.7	27.0	2.75	2.21	0.268
Desized	1.57	1.05	0.63	93.21	44.0	23.9	2.78	2.22	0.367
Bleached	0.59	0.56	0.19	98.34	41.6	25.8	2.55	2.98	0.815
Continuous Bleaches (Peroxide)									
Control	1.98	1.03	1.21	91.36	46.4	26.1	2.75	2.13	0.256
Desized	1.17	1.02	0.40	92.15	43.8	24.5	2.83	2.30	0.391
1st Steep	0.88	0.76	0.25	98.40	37.3	23.5	2.71	2.93	0.608
Bleached	0.55	0.51	0.13	98.66	41.3	23.5	2.57	3.34	0.812
Average (11 processes)									
Control	1.98	1.02	1.24	91.62	47.0	26.9	2.76	2.15	0.266
Desized	1.32	1.06	0.43	92.91	43.8	24.4	2.76	2.27	0.389
Bleached	0.51	0.46	0.13	98.66	41.8	24.9	2.52	4.17	0.812

[1] All values are the averages of analyses from several processes.
[2] Percentages are based on oven-dry weights of samples.

BLEACHING METHODS
Compared by Laboratory Analyses

HIGHLIGHTS: *Hypochlorite, peroxide kier, and continuous peroxide bleaches all have disadvantages but all produce commercially acceptable cloth—Lower residual impurities in the kier processes—No difference in reflectance.*

By JAMES H. KETTERING
Southern Regional Research Laboratory, New Orleans, La.

NEED FOR COMPARATIVE DATA on the three general classes of bleaching procedures in use today prompted the investigation here reported. Eleven mill processes as applied to the bleaching of cotton cloth, representing (1) the caustic-soda kier boil and hypochlorite bleach, (2) the caustic-soda kier boil and peroxide kier bleach, and (3) the continuous processes using hydrogen peroxide or chlorite, were surveyed and compared by analyses of the fabrics. The analytical data are summarized in Table I. Although each of the three classes of bleaching had some disadvantages, all were satisfactory and produced fabrics of good commercial quality.

RESIDUAL MATERIALS. The caustic-soda kier boil and hypochlorite bleach yielded fabrics with lower amounts of residual impurities (alcohol solubilities, wax, and ash) and with higher cellulose contents, than the fabrics from the continuous processes. The latter, in turn, showed slightly lower amounts of residual impurities and slightly higher cellulose contents than fabrics from the caustic-soda kier boil and hydrogen peroxide kier bleach.

Because of the exceptional power of alcohol to remove a variety of constituents from cotton, among which are waxes, sugars, nitrogenous or protein residues, and a large part of the mineral salts—a reduction in alcohol solubility means better purification of the fabrics. After a kier boil, alcohol solubilities and wax values are practically identical for the bleached fabrics.

Wax and ash are the most difficult constituents to remove from cotton fabrics, and their removal is significant indication of the effectiveness of a bleaching procedure. From the analysis given in Table I, it can be easily shown that the peroxide kier bleach removed a smaller percentage of the wax and ash present in the gray fabrics than either of the other two processes. The continuous bleaches removed slightly more of the original wax and ash. The caustic-soda kier boil and hypochlorite bleach was much more effective in removing the wax and ash. The average for all processes tested was approximately 54% wax and 90% ash removal. By subtracting the percentage of cellulose from 100%, one finds that residual impurities after bleaching varied from 1.07 to 1.66% and averaged 1.34% of the weight of the oven-dry sample. From a third to a half of this was residual wax and ash.

FABRIC CHANGES. When measured by fabric changes (breaking strengths, thicknesses, weights, and fluidities), the caustic-soda kier boil and peroxide kier bleach showed slightly better results than the continuous process using hydrogen peroxide; and both of these gave better results than the caustic-soda kier boil and hypochlorite bleach.

Breaking strengths are influenced by a number of factors, some of which are not fully understood, such as moisture content, wax removal, and

(Continued on page 224)

Mr. Kettering was transferred to Navy Dept., Naval Research Laboratory, Washington, D. C., Nov. 23, 1947. The SRRL is one of the laboratories of the Bureau of Agricultural & Industrial Chemistry, Agricultural Research Administration, U. S. Dept. of Agriculture.

These BECKMAN INSTRUMENTS

can reduce waste . . . improve uniformity . . . save time . . . cut costs . . . in your textile operations

The Beckman Model "R" Automatic pH Indicator—ideal for automatic process control.

BECKMAN pH INSTRUMENTS are recognized throughout industry as the most advanced, most versatile and most accurate pH equipment available.

Through the scientific application of Beckman pH Control you can perform many textile operations more efficiently and more uniformly, with less waste and better product quality. Typical applications include . . .

DESIZING — to prevent fiber damage when removing sizing materials.

BLEACHING — to control alkalinity, whether using caustic or peroxide.

MERCERIZING — to prevent damage by too-strong caustics.

DYEING — to control acids and alkalies to insure even dyeing and protection of cloth.

SCOURING — to control alkalinity of soap solutions.

CARBONIZING — to insure proper acid concentration for adequate cleaning.

SOAKING — to insure neutral soaking solutions prior to "throwing" rayon or silk.

LABORATORIES — for varied research and control operations.

. . . and many other applications.

There Is a Beckman pH Instrument for Every Requirement

— from small meters for portable plant and field use to fully automatic equipment for large-scale process control applications. Portable instruments include both battery and AC operated types, and an unusually wide selection of Beckman Glass Electrodes is available to meet every application.

Helpful Booklet. Send for this free booklet "What Every Executive Should Know About pH" . . . an informative non-technical explanation of Beckman pH Control and applications.

BECKMAN QUARTZ SPECTROPHOTOMETER —

This instrument is rapidly becoming the standard equipment for color control, color matching, color specifying and other color standardizing operations in the textile industry. It can be used either for exact-color analyses by reflectance measurements on textiles and other opaque materials . . . or for transmission and density measurements on dye fluids and other transparent solutions . . . supplying a permanent record that can be filed for future reference. It also can be used for analyzing chemical solutions quantitatively. By all standards, the Beckman Quartz Spectrophotometer is not only the most advanced, most compact, most versatile spectrophotometric equipment available, but also the least expensive. It is unusually simple to operate and no highly-trained personnel is required.

- The Beckman Quartz Spectrophotometer covers a wide spectral range — from 220 mmu in the ultraviolet, through the visible, to 1000 mmu in the infrared — the complete range of interest in textile applications.
- Measurements can be made to unusually narrow spectral band widths, permitting more accurate color analysis and differentiation.
- Scale can be easily read to 0.1 mmu in the ultraviolet — to 1.0 in the infrared.
- For maximum convenience, portability and accuracy the monochromator, light sources, phototubes and electrical circuits are all enclosed within one compact case.
- Stray light effects are held to less than 1/10% over most of the spectral range, assuring maximum accuracy.
- Direct readings in percent transmission and density can be made simultaneously.

There are many other unique advancements incorporated into the Beckman Quartz Spectrophotometer. Write for full details.

Beckman Model "DU" Quartz Spectrophotometer.

LET US STUDY YOUR INSTRUMENTATION PROBLEM

Beckman equipment includes other instruments besides those outlined above. So, whether yours is a problem in pH control, color control or other specialized textile applications, let our trained engineers study your needs and make recommendations on the equipment best suited to your requirements. No obligation, of course.

Send for descriptive literature on Beckman Instruments! Beckman Instruments, National Technical Laboratories, South Pasadena 12, California

BECKMAN INSTRUMENTS CONTROL MODERN INDUSTRIES

Fig. 1. Testing with the Shirley meter is here being performed by Miss Edna Wright of the Hogansville laboratory. Photo by Charles J. Beach, Jr.

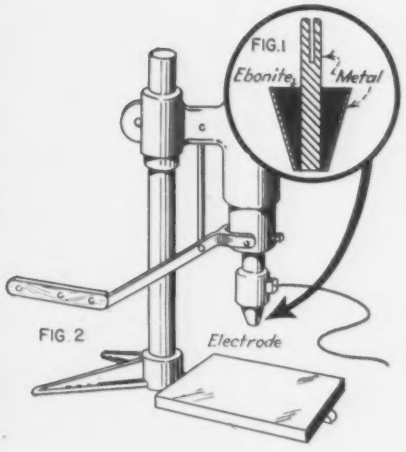


Fig. 2. Electrode of the meter is mounted in a frame so that 45 lb. pressure can be exerted on it.

MOISTURE METER
Calibrated for Mill Use

HIGHLIGHTS: *Meter gives quick, accurate results when factor is worked out—Fifty samples used in U.S. Rubber Co. procedure—Several readings should be averaged.*

By E. A. McMASTER

Supervisor, Physical Testing Laboratory, U.S. Rubber Co., Textile Div., Hogansville, Ga.

NEED FOR A QUICK METHOD for determining moisture regain led to the investigation of the Shirley moisture meter developed by the British Cotton Industry Research Association.

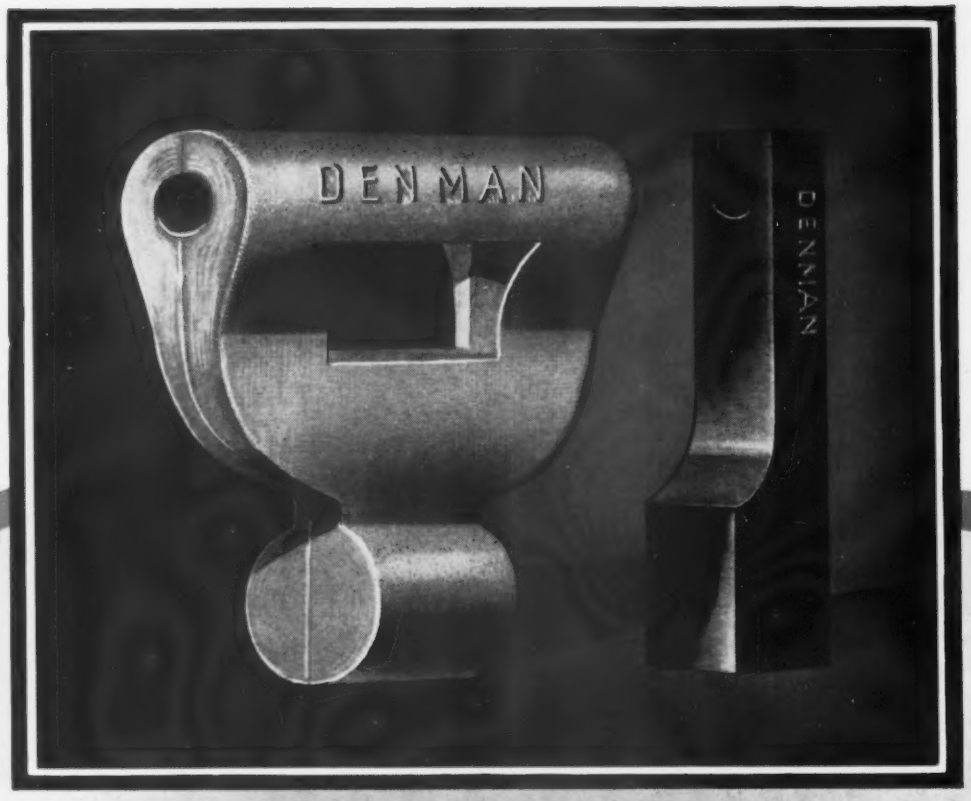
Recently a new Shirley moisture meter was calibrated for one of the U. S. Rubber Co. plants. Only the dry scale was used, and the Shirley moisture meter was calibrated with an Emerson regain oven. A correction formula for converting meter readings to oven regain was calculated. Using this factor, a conversion chart was drawn up for readings on the dry scale. This covered readings of 4.50% through 9.00% regain, converted to oven regains of 3.53% through 8.15%.

In the calibration tests, 50 samples of plied yarn were conditioned overnight in a conditioning room at 70° F.

TABLE I—Shirley Moisture Meter Readings Converted to Emerson Oven Regains

Per Cent Moisture Regain = (1.0284 × Moisture Meter Reading) — 1.0981

S.M.M. Reading	Oven Regain	S.M.M. Reading	Oven Regain	S.M.M. Reading	Oven Regain	S.M.M. Reading	Oven Regain	S.M.M. Reading	Oven Regain	S.M.M. Reading	Oven Regain
4.50	3.53	5.25	4.30	6.00	5.07	6.75	5.84	7.50	6.61	8.25	7.39
4.55	3.58	5.30	4.35	6.05	5.12	6.80	5.90	7.55	6.67	8.30	7.44
4.60	3.63	5.35	4.40	6.10	5.18	6.85	5.95	7.60	6.72	8.35	7.49
4.65	3.68	5.40	4.46	6.15	5.23	6.90	6.00	7.65	6.77	8.40	7.54
4.70	3.74	5.45	4.51	6.20	5.28	6.95	6.05	7.70	6.82	8.45	7.59
4.75	3.79	5.50	4.56	6.25	5.33	7.00	6.10	7.75	6.87	8.50	7.64
4.80	3.84	5.55	4.61	6.30	5.38	7.05	6.15	7.80	6.92	8.55	7.69
4.85	3.89	5.60	4.66	6.35	5.43	7.10	6.20	7.85	6.97	8.60	7.75
4.90	3.94	5.65	4.71	6.40	5.48	7.15	6.25	7.90	7.03	8.65	7.80
4.95	3.99	5.70	4.76	6.45	5.54	7.20	6.31	7.95	7.08	8.70	7.85
5.00	4.04	5.75	4.82	6.50	5.59	7.25	6.36	8.00	7.13	8.75	7.90
5.05	4.10	5.80	4.87	6.55	5.64	7.30	6.41	8.05	7.18	8.80	7.95
5.10	4.15	5.85	4.92	6.60	5.69	7.35	6.46	8.10	7.23	8.85	8.00
5.15	4.20	5.90	4.97	6.65	5.74	7.40	6.51	8.15	7.28	8.90	8.05
5.20	4.25	5.95	5.02	6.70	5.79	7.45	6.56	8.20	7.33	8.95	8.11



DENMAN *Challenges the* FIELD

Back when many of today's high-speed looms were still in the blueprint stage . . . Denman and Terrell were pioneering tougher rubberized fabric pickers.

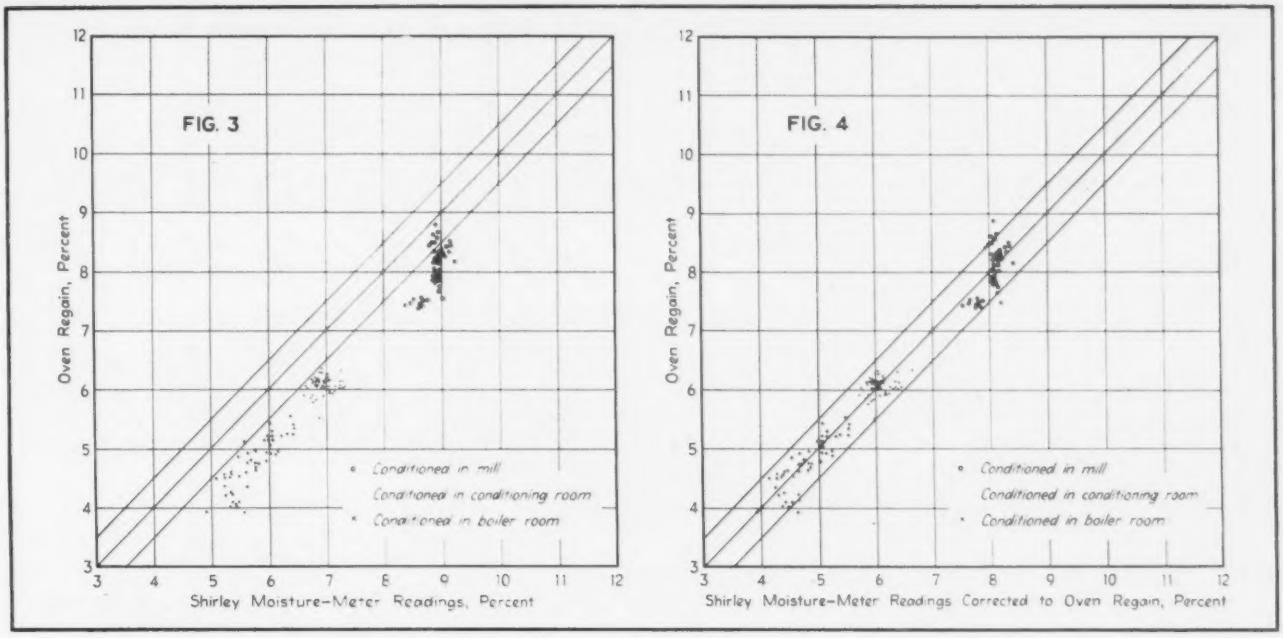
Today, comparative cost records put Denman first in service and economy. Today, also, users of Denman Pioneer Pickers can be sure they are getting a proved and tested product that has been developed and perfected through the continuous efforts of the Denman-Terrell inter-related research . . . research that carries over many years of broad experience and knowledge gained through the cooperation of mills in making actual operating tests, as well as in the laboratory. That's why Denman Pioneer Pickers triumphantly challenge the field—to give you

LOWEST COST PER LOOM . . . PER YEAR

Exclusive Sales Agent

THE TERRELL COMPANY, INC.

CHARLOTTE, N. C.



Figs. 3 & 4. Shirley moisture readings on chart at left are corrected to oven regain and replotted in chart at right.

and 55% r.h. Each sample was tested by the moisture meter, taking an average of five readings on the dry range. Immediately after the meter test, the sample was placed in a regain bottle, and an oven regain was run on it.

Another set of 50 samples was placed in a damp room overnight, so that they might absorb moisture and show a high regain. These samples were brought into the conditioning room in regain bottles and placed in a desiccator for 30 min. to bring them to conditioning-room temperature. Meter readings were then taken, and oven regains were run.

A third set of samples was placed in the boiler room overnight so that they might lose moisture. These were tested in the same manner as the other two sets. No set was tested at the same time, but each was divided into groups of samples small enough to be handled by desiccator and oven.

TEST RESULTS. A simple correlation analysis was made of the 150 meter readings and the 150 oven regains. From the correlation factor (0.9829) and the straight-line formula, a conversion formula was prepared and a chart was made, by which moisture meter readings can be converted to oven-regain percentages. (See Table I.) The formula reads: Per cent moisture regain = (1.0284 × Shirley moisture-meter readings) −1.0981.

Two scatter diagrams were made, one of the meter readings vs. oven regains, (Fig. 3) the other of converted meter readings vs. oven regains (Fig. 4). Of the converted meter readings, 90% are within ±0.4% of the oven values, 94.67% are within ±0.5% and 98% are within ±0.6%. The manufacturer quotes 94% within ±0.4%.

No consideration was given to the variability of temperature and relative humidity in the conditioning room. Foxboro and psychrometer readings were made at the time of each test and the variation was negligible.

The calibration discussed here has been for an instrument which is kept in one place, under constant atmospheric conditions. However, the moisture meter is portable and can be used under various conditions. If it is to be moved from place to place, calibration must be made considering temperature and humidity. This can be done by broadening the above procedure to include various conditions and computing, through multiple correlation, a conversion formula which incorporates temperature and humidity. Such a formula was computed for the moisture meter in the U. S. Rubber Co., physical-testing laboratory. It reads:

Corrected Regain = (0.7525 × meter reading) − (0.03606 × temperature) − (0.00844 × per cent r.h.) + 3.92

The manufacturer states that the use of the Shirley moisture meter in damp places like conditioning cellars cannot be recommended.

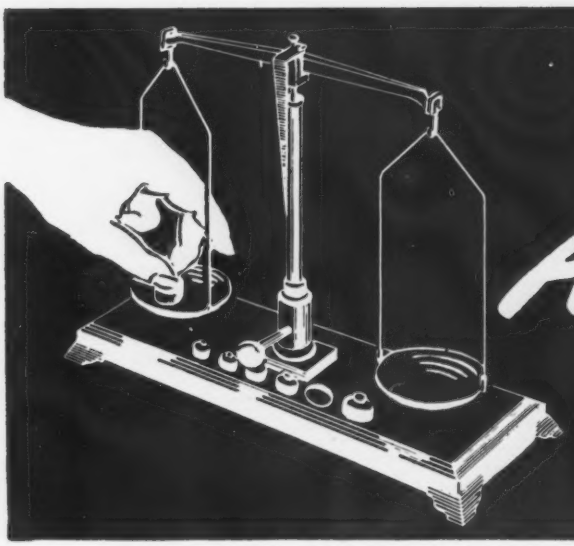
DESCRIPTION. The Shirley moisture meter is a portable, electric device for determining the moisture regain of textiles. The traditional methods of determining regain or moisture content by bone-drying the sample entails close weighing, careful handling, and accurate timing. They are time-consuming and tedious. The Shirley moisture meter accomplishes the same results in a matter of seconds.

The moisture meter determines regain by measuring the moisture content electrically instead of by percentage of weight, as in the old methods. An electric current is passed through a part of the sample by means of an electrode (Fig. 1), and the re-

(*Continued on page 201*)

TABLE II--A Few Sets of Five Meter Readings and Their Averages
(Readings at five different spots on each of three samples)

Plied Yarn Conditioned in Conditioning Room	Plied Yarn Conditioned in Boiler Room	Plied Yarn Conditioned in Mill
6.75	6.10	9.00
6.88	6.22	8.95
6.75	6.20	8.82
6.95	6.25	9.00
6.78	6.20	8.75
ave. 6.82	ave 6.21	ave 8.90



You've Got to Measure

ACCURATELY

to Get the Best Results!

For Accurate Salt Measurement

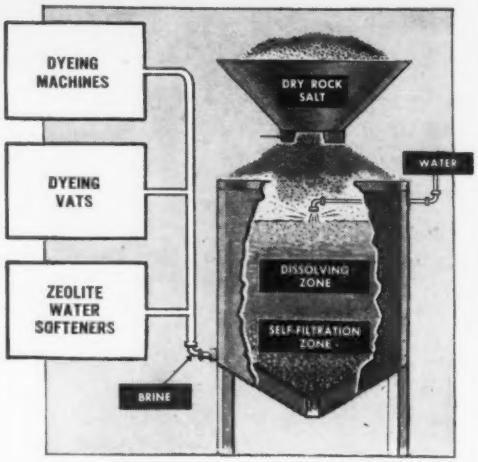
"PASS the SALT" BY LIXATOR

EVERY DYER knows that salt is a top-flight exhausting agent ... that it must be accurately measured to insure complete exhausting without waste ... and further that it must also be uniformly distributed in the dye bath to prevent spotting, streaking and white edges. The question is *how.*

With Lixate brine accurate salt measurement and uniform distribution are assured. For the Lixator automatically and continuously makes 100% saturated, crystal clear brine. Since each gallon of Lixate brine *always* contains 2.65 lbs. of salt—a definite volume of Lixate brine supplies a definite quantity of salt. The trouble and waste of measuring salt by hand or by mechanical devices, or of measuring by weight without regard to water absorption during storage, are things of the past. And added to the dye bath, salt, as brine, is immediately diluted and dispersed throughout.

Leading companies in your industry and many others are availing themselves of the Lixator's ability to measure salt accurately ... to reduce labor and handling costs and to improve the quality of their products. It will pay you to investigate the Lixate Process for making brine for your plant.

HOW THE LIXATOR WORKS



In the upper zone—Flowing through a bed of rock salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. **In the lower zone**—Through use of the self-filtration principle *originated by International*, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

WHAT THE LIXATOR PROVIDES

- ✓ **Chemical and bacterial purity to meet the most exacting standards for brine**
- ✓ **Unvarying salt content of 2.65 pounds per gallon of brine**
- ✓ **Crystal-clear brine**
- ✓ **Continuous supply of brine**
- ✓ **Automatic salt and water feed to Lixator**
- ✓ **Inexpensive, rapid distribution of brine to points of use by pump and piping**

Get the full story on why accurate salt measurement is *always* possible with Lixate brine. Send for your copy of our *free* pamphlet *today!*

INTERNATIONAL SALT COMPANY, INC., Dept. TW-4, Scranton, Pa.

Gentlemen:
Please mail absolutely free your pamphlet, "How Lixate Brine Solves the Problem of Accurate Salt Measurement."

Name _____

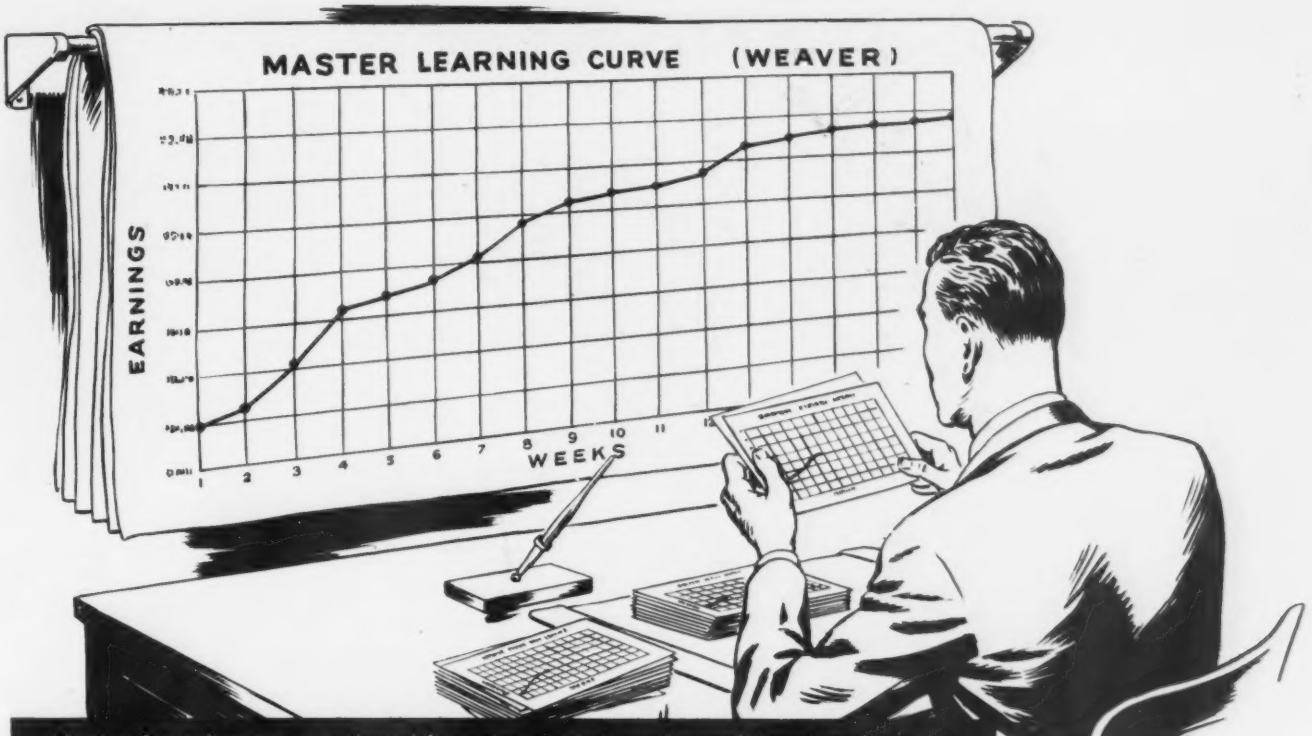
Firm _____

Street _____

City _____ *State* _____

The LIXATE *Process*
Reg U S Pat Off
for making brine

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.



***Master learning curves** plotted from past records can be useful in determining at an early stage whether to retain learners on a job requiring a long term of training*

EMPLOYEE TRAINING
Can Be Combined with Research

***HIGHLIGHTS:** Director of Fieldcrest Mills Personnel Research points out benefits that can result from research approach to training—Careful planning can combine research with actual programs—Learning curves can establish performance standards at early stage in jobs requiring long training period—Attitude surveys should be tailored to individual mill's problems.*

GREATER USE of a research approach to industrial training will pay both immediate and long-term dividends to those who use it, stated Dr. William McGehee, Director of Personnel Research, Fieldcrest Mills, Spray, N. C., in a recent address before the Personnel Div. of American Management Association in Chicago. Pointing out the deplorable lack of specific research data on industrial-training problems, Dr. McGehee said that organizers of training programs must plan their programs so that data on problems may be secured while the training is carried on.

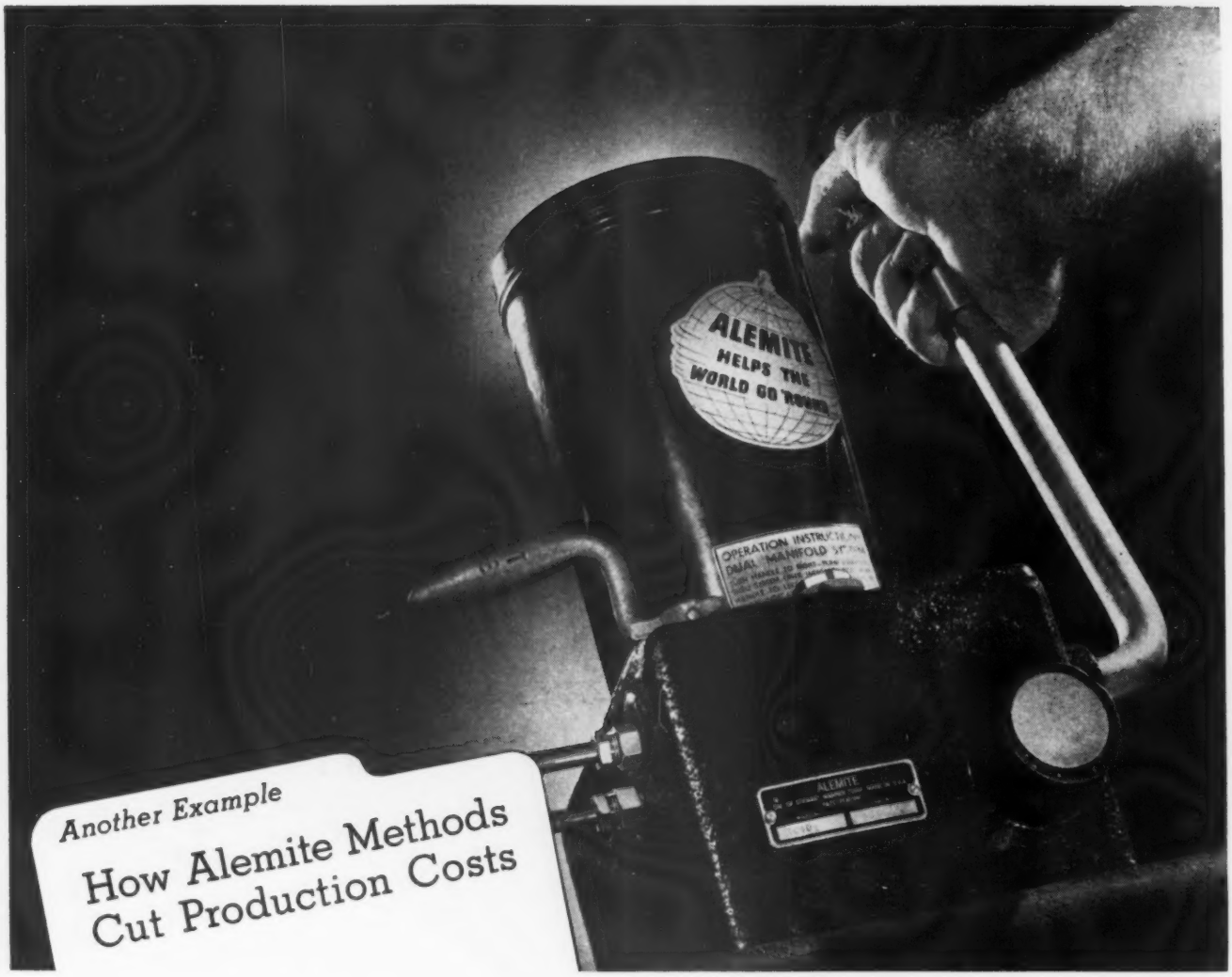
Discussing some of the problems confronting training directors that can be attacked from a research point of view without disrupting the training program, Dr. McGehee pointed out how use of learning curves aided a Fieldcrest program.

One of the problems which constantly arises in training for industrial jobs is the point at which diminishing returns from training begin, he said. The examination of learning curves from many activities show them to be negatively accelerated, i.e., smaller relative amounts learned with each practice period. For example, if a group of weavers reach 75% of their maximum efficiency and improve only by small increments each month thereafter, at what point should formal training cease? Securing data to determine an answer to this problem need not interrupt current training if any sort of decent records have been kept on the training of learners in the past. It is simply a matter of going to production or payroll records and developing learning curves for the job in question. Training should cease when the costs of training exceed the loss resulting from discontinuing formal training.

EFFICIENCY PREDICTION. Incidentally, he added, useful by-products can be secured from plotting progress curves for any job which requires a relatively long learning period. One by-product is that of establishing standards for determining whether or not to retain a learner in training in terms of ultimate possible level of production.

Recently, learning curves were plotted for one of the jobs in Fieldcrest Mills for just this purpose. The group of employees on which the curves were based were employed in an exacting operation which required high manual skill, keen color vision, perceptual memory of a high order, and definite emotional stability. Wide individual differences were apparent in ability to reach an acceptable standard of production among the trainees.

(*Continued on page 204*)



Another Example

How Alemite Methods Cut Production Costs

Reduces 182 Lubrication Points to One!

Adds Productive Time to Machines with Faster, More Efficient Handling and Application of Lubricants

Your Lubrication Methods May Be More Antiquated Than You Suspect

If your oilers are still lubricating your machines bearing by bearing, you're losing manhours and cutting productive time. It's time to check up! The Alemite Representative is a *specialist* in modern methods of handling and applying lubricants. A five minute conference with him can easily show you new cost-cutting opportunities. Write to Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.

Whether it's only one hard to reach bearing on a machine or 182 lubrication points on another, you can lubricate all of them perfectly with this modern Alemite Method. With one hand, and a few strokes on a handle, any bearing, no matter how remote, is lubricated perfectly *in seconds* from one safe, central point while the machine keeps on producing!

An Alemite Centralized Lubrication System eliminates "human error," adds more productive time to any machine. It delivers a measured amount of lubricant to each bearing, then signals when the job is completed. Result—no costly bearing failures due to hit-or-miss lubrication.

Just one of many ways that Alemite Methods help industry cut production costs through simplified lubrication procedures. And the Alemite Representative can show you case after case where a time study analysis has proved that his methods reduce maintenance costs. These methods eliminate costly, time-consuming handling of oils and greases . . . slash shutdown time for lubrication . . . completely mechanize lubrication from-barrel-to-bearing . . . save grease . . . keep dirt and moisture out of lubricants. These benefits all add up to lower production costs. Get the complete facts, today.

ALEMITE

STEWART WARNER

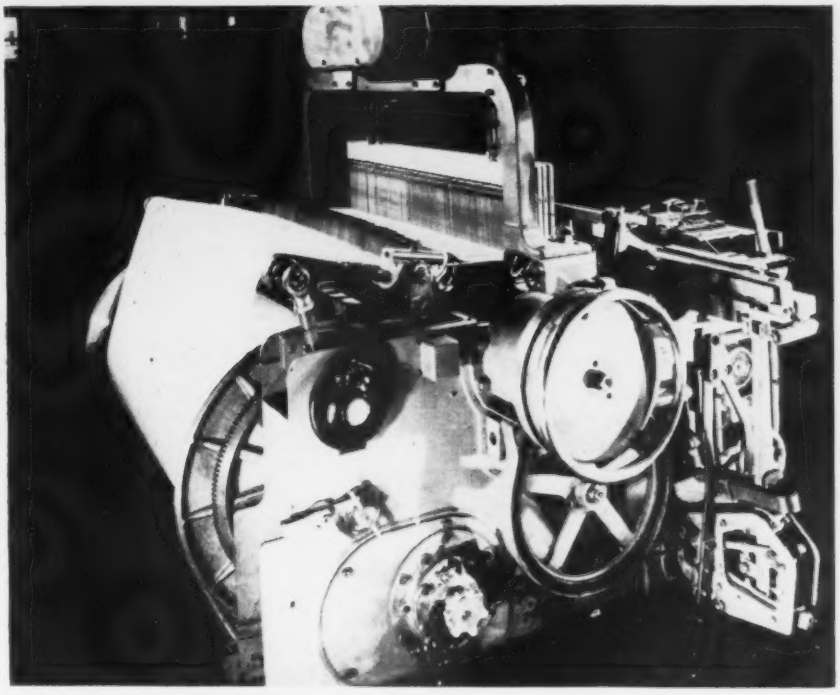
MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

TEXTILE Equipment NEWS

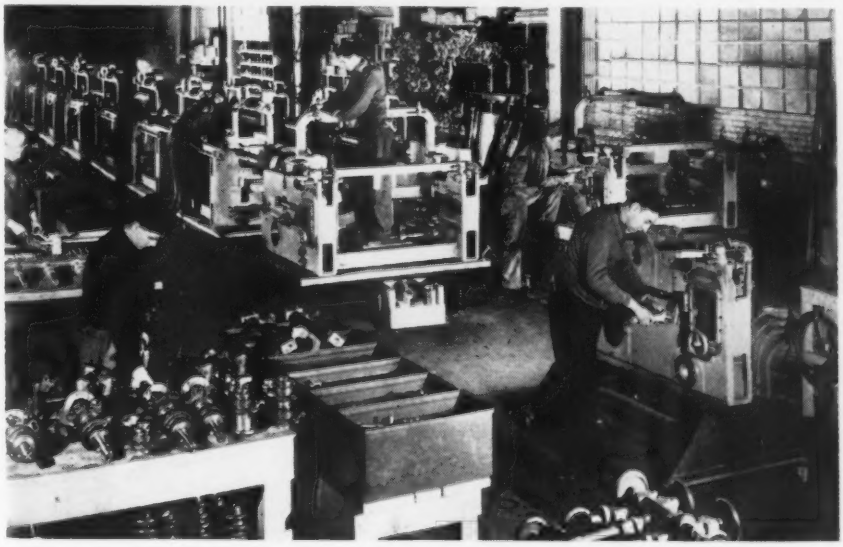
KELLOGG LOOM

Goes Into Production

HIGHLIGHTS: *Single-shuttle, high-speed bobbin changer announced—"Thousands" to be produced in 1948, more in 1949—Precision manufacture and unit assemblies featured—Loomsides are pressed steel—Filling feeler is electric—Warp beam mounted in roller bearings.*



New Kellogg loom *features integral units, pressed-steel loomsides. Knob at lower left regulates let-off tension.*



Assembly line for new Kellogg loom is fed by sub-assembly line at left. Loom is built at Jersey City works.

Entrance, as a large-capacity loom builder, into textile-machinery manufacturing is announced by the M. W. Kellogg Co., Jersey City, N. J., a company prominent in the construction of petroleum refineries, chemical-manufacturing facilities, and atomic-fission plants.

The loom will be known as the Kellogg loom (rather than as the Pullman loom, a term that has been used commonly to date by the industry because of the association at the Kellogg company with Pullman, Inc.). It is to be produced in widths from 40 to 60 in., later undoubtedly in still other widths. Production for 1948 will "total several thousand with many thousand more in 1949," the company states.

The loom is conventional in its principles of operation but features high-speed production and a unit assembly for each major loom motion. For example, the let-off mechanism and the take-up mechanism are both units which can be quickly replaced with a minimum of down-time. Removed units can be repaired either at the plant or by the loom builder, since each major motion is a complete sub-assembly.

Loomsides are made from formed sheets of steel, two sheets on each side, between which are housed the picking-ball mechanism and other parts.

The loom utilizes a 26-in.-head light-metal warp beam that has removable splined shafts, instead of conventional journals, and operates on roller bearings.

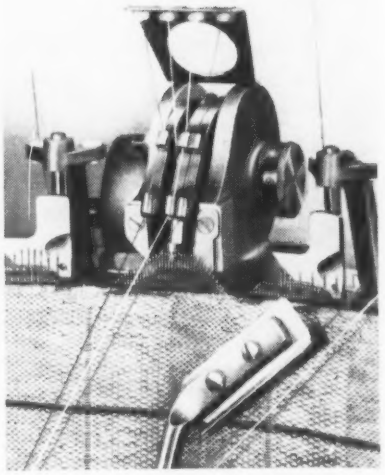
The bobbin-changing mechanism is designed with a view to transferring partly filled packages as easily as filled. Warp stop motion is electric, as is the filling stop motion, which utilizes a new design of feeler. The loom is reported to operate "at considerably higher sustained speeds" than have been common in the past—30 to 40% over reputed averages on cottons.

When announcing the loom, the Kellogg Co. stated that its entire organization of specialists, which totals "close to 1,000," was utilized in the development. Oscillographs, strain

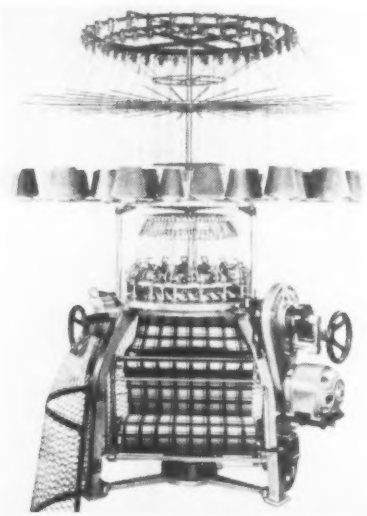
gages, and high-speed photography were employed in its development. Prototype looms have been operated for a year and a half and are still undergoing life-testing. Sales and servicing facilities are being set up.

Variable Striper with Pattern Wheels Produces KNIT PLAIDS

HIGHLIGHTS: *Automatic variable striper said to double current production figures on 4-color variable-striped fabric—Cylinder and take-up revolve, yarn stand and cams are stationary—Pattern-wheels and stripes at same time—16 of 32 feeds knit 4 colors.*



***A front view** shows the four-color striping feeds. Three of the four feeding fingers are out of action and one is knitting. Each time the striping drum revolves, the finger selected moves into knitting position.*

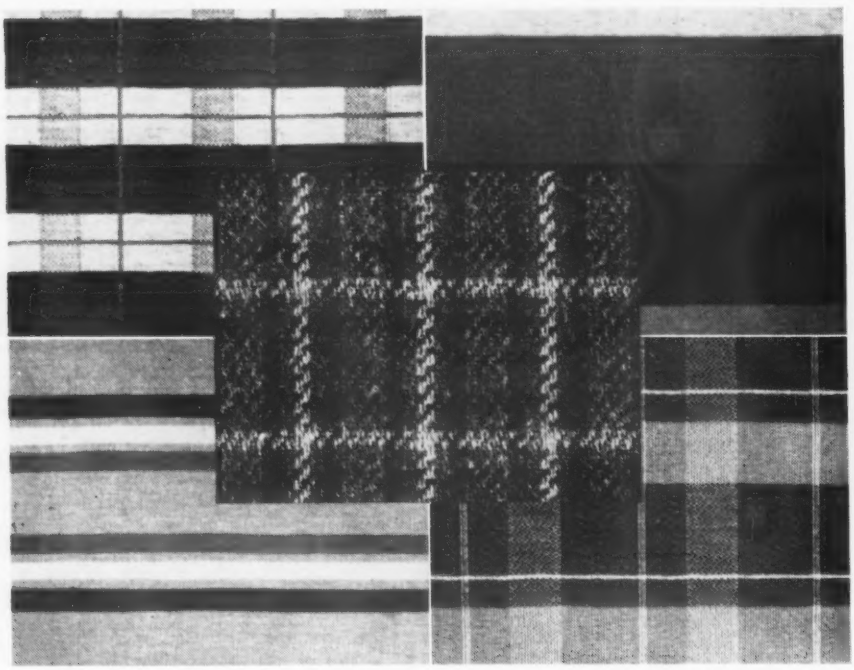


***The Model SA variable striper** has a 24-in. cylinder, 23 feeds.*

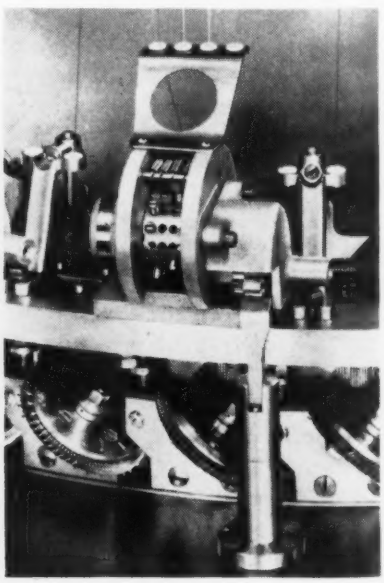
Complete ranges of knit-plaid designs and variable-striped fabric may be produced simply and efficiently on a new machine developed by Supreme Knitting Machine Co., Inc. 105 Johnson Ave., Brooklyn 6, N. Y. The Model SA machine is an automatic variable striper that operates with 3-level pattern wheels. It is said to produce 8 to 10 lb. per hr. of 4-color variable-striped fabric. The yarn rack and cams of the new machine are stationary, while the cylinder and take-up revolve. There are 32 feeds, 16 of which are stationary, and 4-color drum stripers with automatic controls for selecting all stripes individually. All 32 feeds will take pattern wheels.

The pattern chain on the new machine serves only as a counting mechanism and to institute changes. Actual color changes are made by feeding fingers controlled by pins inserted in the striping drums. The machine may be set to knit either plain-jersey cloth with variable stripes; or it may be used with pattern wheels to produce such fancy fabrics as knit-and-tuck cloth, or three-position cloth, both with variable stripes. Patterning is considerably simplified.

Plaids are usually knit on the "floatless" lay-in principle, the float being laid-in or tied to the back of every

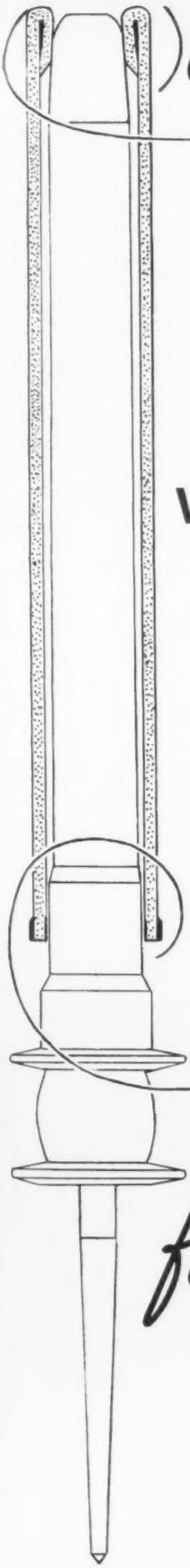


***Variable-striped and plaid** fabrics are produced on the new Model SA machine. One fabric is wool, others are cotton.*



***Back view of feeds** of knitting-elements system. Shown in detail is the stationary striping feed with its simple ratchet mechanism for single-color selection. The arrangement of pins and holes in the striping drum predetermines the color selected when the drum revolves. Three-level, unitary pattern wheels are mounted on all feeds.*

Only One Point of Contact



SONOCO

STRAIGHT SIDE WARP SPINNING BOBBIN

The spindle top fits the "cushion grip" with a gentle squeeze to make top-drive contact, which breaks sharp and easy without drag or pull in doffing.

The SONOCO Straight Side Warp Spinning Bobbin represents the greatest improvement in warp spinning to be made in recent years . . .

Because the parallel outside surface of the SONOCO Bobbin provides more even tension from top to bottom in spinning . . .

Because the parallel smooth surface of the SONOCO Bobbin permits higher speed delivery on spooler and . . .

Because the principle of a straight side bobbin fitting a straight side spindle acorn without contact is fundamentally correct design.

for Easier Doffing

Regardless of seating position, the SONOCO Warp Spinning Bobbin cannot bind or make drive contact with spindle at base — because bobbin has straight sides and spindle acorn is *not* tapered . . . Thus *uniformly* easy doffing is a fact with SONOCO Bobbins.

SONOCO PRODUCTS COMPANY

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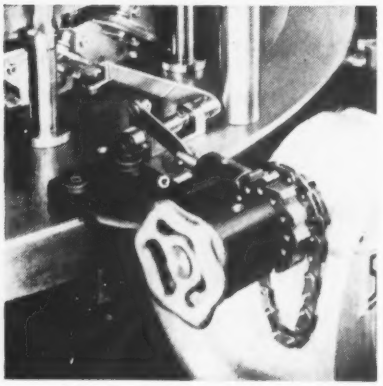
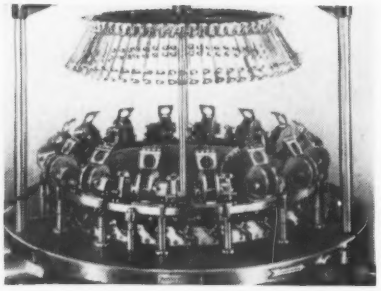


The striping-control mechanism *consists of a simple, short chain, which will give any type of stripe selection desired. The chain consists of only two type links which count each revolution made by the cylinder and institute changes on all striping feeds.*



The knitting-elements system *features a revolving cylinder and 32 complete stationary feeds, 16 of which are four-color drum stripers with automatic controls for single color selection. All 32 feeds will take three-level, unitary, pattern wheels; and all feeds are equipped with patented lay-in cams.*

other wale. If desired, the stretch of the cloth may be eliminated; and the texture then approximates that of woven material, the manufacturer states.

The new machine is designed to open a new field in the knitting of women's dress cloth and suitings, with novelty polo-shirt and upholstery-material manufacturers also finding use for the unique plaid fabrics produced.

The Model SA has a 24-in. diameter cylinder, 1,380 needles, is 18 cut, and can be supplied with a 64- or 80-end yarn stand and stop-motions.

Operating speed of this machine is 24 to 25 rpm.

Features standard on Supreme's line of machines are included: interwinding floating cloth take-up, dual electric stop motion, automatic-idling hand wheels, etc.

Power is supplied by a 1½-hp. electric motor.

High-Speed Drying Unit for Slashers Uses Circulating Hot Air

A new, high-speed drying unit for slashers, capable of processing at least 1,000 lb. of yarn per hour, has been developed by the Research Div. of the Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.

Thoroughly tested over a period of 3 yr., the box is said to have proved capable of efficiently handling many different types of yarn. A wide range, including 100% cotton, 100% worsted, rayons, and blends of all three have been run successfully.

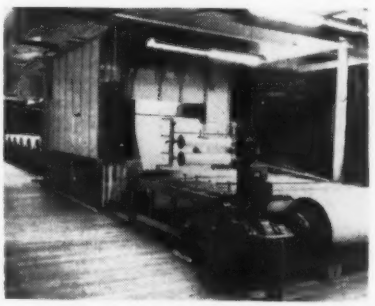
Drying is accomplished by passing heated air through the yarn, exhausting the moisture-laden air and, at the same time, introducing fresh, clean air to continue the drying cycle. To decrease the amount of steam needed to attain drying temperatures, 70 to 80% of the air is reheated and reused.

The yarns passing through the unit are not exposed to direct blasts of hot air. Special nozzles have been designed which reduce the air velocity generated at the fans and distribute it in a soft, even pattern over and through the entire yarn sheet. Only 14 yd. of warp are inside the dryer at any one time; but the heated air, recirculated within the box at a rate of 30 times per minute, is said to dry the yarn without fiber disturbance of any kind. Stretching is kept at a minimum.

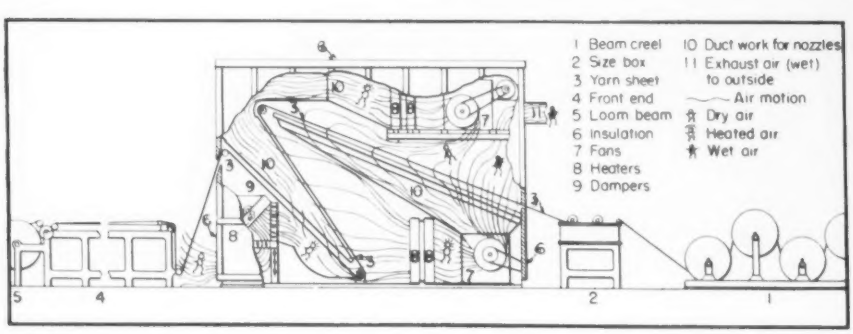
The low air velocities used in the new dry box are designed to permit the air to remain in contact with the yarn a longer time, thereby to remove more water with each cubic foot of air presented. The air at low velocity seeps through the yarn sheet and has no tendency to bounce off and dissipate from the sides of the yarn sheet.

Because of the insulation, heat loss outside the box is claimed to be reduced to a negligible amount. Even after prolonged operation with the temperature inside the box at 260° F. the outside surface of the panelling which encloses the unit is reported as only about 105° F., so that operators can work in comfort close to the machine at all times.

The operation of the dry box is simple and completely automatic. The interior of the unit is said to cool from 260° F. to about 130° F. seconds after the operator stops the slasher. This prevents yarn damage from too-long exposure to high temperatures and permits the operator to go inside the box immediately after stopping it. There are no valves to turn off or other operations to perform. The box cools automatically when the stop switch is thrown. Heat and air circulation is



The box is designed *to fit between the front and rear units of any slasher.*



Only 14 yd. of warp *are inside the box at one time, but low air velocities permit heated air to remain in contact with the yarn a longer time.*

The tearing action *involved in splitting the dry yarn sheet at the front end is eliminated by this wet-splitting device at the back end of the box.*

VATROLITE

For pleasing the hard-to-please when dyeing indigo on wool, vat colors on cotton, linen, silk, and rayon — in general stripping work on cotton and rayon — your best bet is Vatrolite.

VATROLITE DOES NOT DUST . . . Granular character — it's easy to handle.

DOES NOT LOSE STRENGTH . . . Kept dry, it retains full power over longer periods . . .

DECOMPOSES SLOWLY IN DYEBATH . . . Regular, even results.

UNIFORM . . . Strict manufacturing control for top performance.

Remember these two important points! Vatrolite is a *better* reducing agent. It's made only by Royce.

A BETTER REDUCING AGENT . . .

made only by ROYCE

ROYCE CHEMICAL CO.

CARLTON HILL, NEW JERSEY

MANUFACTURERS OF NEOZYME* • PAROLITE* • DISCOLITE* • DRYTEX* FABRITEX* • GUMOLITE* • CASTROLITE* • VELVORAY* • ZIPOLITE*

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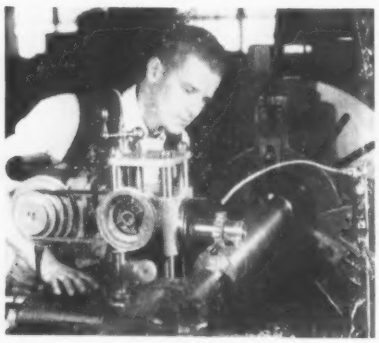
4077

said to be instantaneous on starting up.

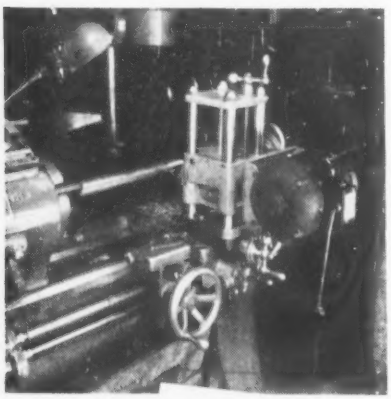
From the time the yarn enters the box until it emerges, it is in contact with moving metal parts only two times. The points of contact are shaped, extruded-aluminum guides. The yarn is 60 to 70% dry and has lost its tacky condition before it reaches the first guide. The possibility for size transfer or yarn disturbance because of sticky rolls is thus eliminated.

The drying unit is designed to be used with the front- and back-end units of slashers now in operation. It is 16 ft. long; 10 ft. wide; and 11 ft., 8 in. high. Attractively housed with all piping, motors, fans, and working parts inside the insulating panels, the dry box presents a clean, streamlined appearance. A 4-ft. sheet of stainless steel covers the bottom of the box to protect it from bumps and to make it easy to clean.

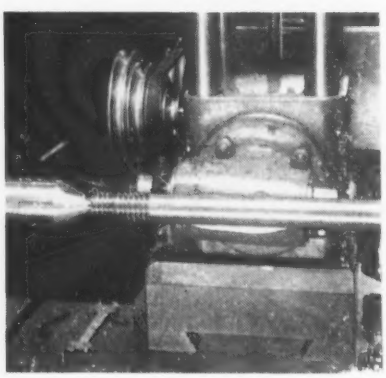
A wet-splitting device has been attached to the back end of the box. This consists of two driven chrome-plated rods which break up the size envelope and eliminate considerable of the tearing action involved in splitting the dry sheet at the front end.



***Milling** a $^{3}/_{4}$x$^{3}/_{8}$-in. keyway in a cold-rolled shaft at the rate of 1 in. per min., the power head only is shown mounted on a 30-in. swing lathe.*



***Drilling** two $^{1}/_{2}$-in. holes at 90° on a 13-in. lathe.*



A milling and drilling head is attached to the power unit for this operation of milling a 6-pitch, 60° thread on a 1-in. piece, 6 threads per min.

Machine-Tool Auxiliary Is Extremely Versatile

Virtual conversion of a lathe into a complete machine shop is said to be the accomplishment of Versa-Mil, a machine-tool auxiliary developed by Versa-Mil Co., 30 Church St., New York, N. Y. The machine consists of a basic power unit to which may be attached interchangeable precision heads for performance of virtually all shop operations.

Mounted on the carriage of a lathe, Versa-Mil is said to perform such diverse operations as milling keyways, faces, splines, gears, and threads; drilling; reaming; boring; routing; grinding, external and internal, cylindrical, taper, and flat surfaces; and tool grinding. A Versa-Mil and a lathe may also substitute for other more expensive machine tools, or supplement overloaded tools, balancing out the shop load.

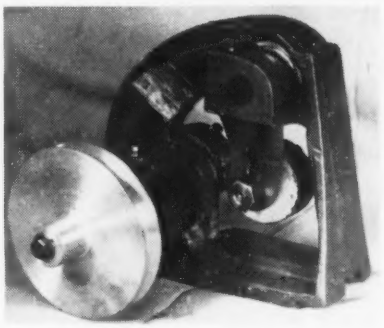
An additional use is in combination with other machine tools to enlarge their scope or to form special machines. Versa-Mil is said to be usable on planers, boring mills, horizontal millers, shapers, and turret lathes to add the functions of drilling, milling, slotting, grinding, and other finishing operations. Many parts normally requiring two or more machine tools may now be finished in a single machine, according to the manufacturer.

One advantage claimed that has particular significance in textile plants is portability—the Versa-Mil unit can be taken to the work. Fastened to the machine frame, or mounted on a feed table, it can mill, drill, bore, and grind on heavy and stationary equipment. It saves the expense of disassembly and transportation of heavy parts by bringing the machine tool to the job.

A series of machining operations normally requiring several machine tools may be done without moving the work piece from the original set-up. Large surfaces may be finished in one continuous operation without the usual need for resetting the work piece.

A wide selection of hardened and ground arbors for mounting all types of standard cutting tools is available. The unit is powered with a $^{1}/_{2}$-hp. motor. Weight of the power unit is 89 lb.; average weight of heads is about 15 lb.

Simple Doffer-Comb Drive Runs on Ball Bearings



Simplicity of construction and economy of upkeep are two of the appealing features of this doffer-comb drive.

Invented by two practical carding overseers, Oscar C. Kay and Vernon Rowe, of Saxon Mills, Chesnee, S. C., for practical mill use, a new K & R doffer-comb drive is now being manufactured by A. B. Bullington Co., Spartanburg, S. C. Units of the drive have been in operation for 3 yr., 24 hr. a day, 6 days a week, according to the manufacturer.

Simple in construction, the new doffer-comb drive has many other attractive features. A comb-stroke adjustment is designed to allow not only the lowering and raising of the comb position but to permit the increase or decrease of the length of the comb stroke to compensate for weather conditions or characteristics of the fibers being processed. This adjustment also permits a lower comb speed by using the stroke modification to accomplish the desired result.

A positive locking arrangement is said to eliminate comb slippage and insure positive and permanent positioning of the comb without the use of set screws. Effective locking is insured even though the comb shaft may be worn or previously scarred by the use of a set screw.

All moving parts of the comb drive are supported on a total of five standard ball bearings, and the only wear that takes place will be in the bearings themselves. These five bearings are reported completely replaceable even by semi-skilled personnel at a mill cost of approximately one-third of the cost of repairing a standard type of comb box. The ball-bearing unit is

AUTOMATIC FORK TRUCK

DEPENDABLE POWER

EXIDE-IRONCLAD BATTERIES assure sustained speed throughout each shift . . .

From a fully charged condition until almost complete discharge, Exide-Ironclad Batteries maintain a high voltage . . . assuring steady, uniform performance all day long. This full shift availability of Exide-Ironclad Batteries is a result of their unique construction, which differs from all other batteries.

One important difference is the positive plate, which consists of a series of slotted tubes containing the active material. So fine are these slots that, while permitting easy access of the electrolyte, they retard the active material from readily washing out. The results are *high power ability, high electrical efficiency, ruggedness* and *long life* . . . the four characteristics of a storage battery. Only Exide-Ironclad Batteries have all four.

For safe, dependable, day-in-day-out performance, choose Exide-Ironclad Batteries, the batteries that 81.1%* of electrical industrial truck owners prefer. **From a recent survey by a leading business publication.*

Write for further particulars and FREE copy of Exide-Ironclad Topics, which covers latest developments in material handling and shows actual case histories.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

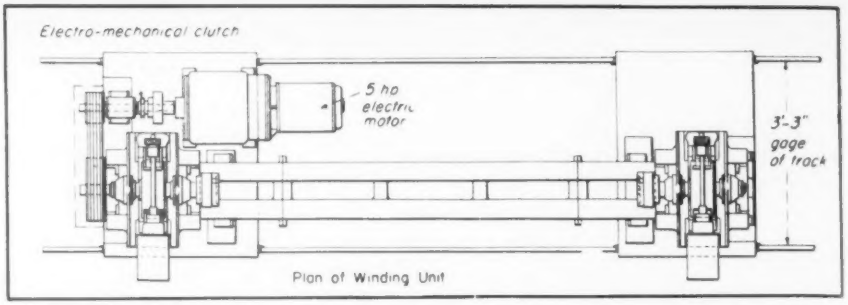
AUTOMATIC TRANSPORTER

designed to eliminate noise and rattle so often present in standard-type comb drives or boxes.

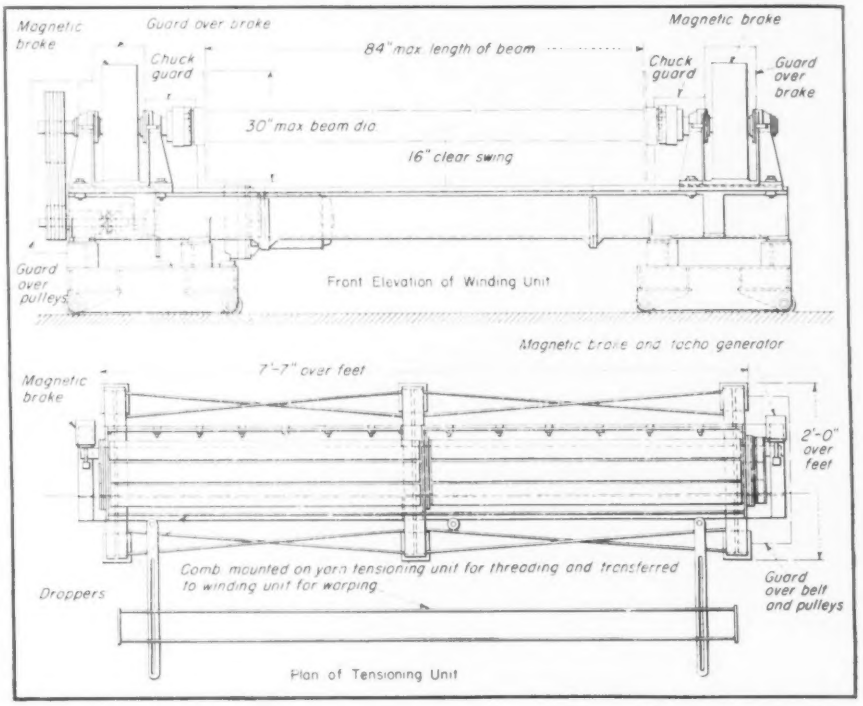
The smoothness and efficiency of this unit is said to increase the useful life of the driving medium, whether it be a band or belt drive, because it permits a slackness in the driving belt which in the standard comb box would result in slippage.

The bearings are lubricated with a standard grease gun and on standard bearing-lubrication schedules through standard Alemite lubrication fittings. One pound of ball-bearing lubricant is said to provide all of the lubrication necessary for one of these units for a period of 20 yr. This method of lubrication eliminates oil on the floor from leaky comb boxes and prevents vaporized oil from accumulating on the doffer for subsequent transfer to the cylinder and flats.

The entire unit is inclosed in a ¼-in. cast-aluminum cover for protection from dust, fly, and mill waste. In addition, the cover prohibits access to the moving parts of the unit while in operation. The cover is easily removed and/or replaced by simply removing one ¼-in. cap screw.



***A variable-speed controller** insures constant yarn-winding speed over a range from 100 to 450 yd. per min.*



***Tension is applied** in the tension unit shown at bottom by braking three yarn-driven rollers. Beam widths from 14 to 84 in. may be accommodated by the adjustable headstock.*

Warper Teams With F. N. F. Knitter

The Cascade warper has been introduced by F.N.F., Ltd., of England, as a counterpart to its tricot knitter because the company believes that existing warping methods may well compromise expansion of warp knitting. The machine is an improved version of a warper developed some years ago by Courtaulds, Ltd. Its features allow for versatility in beam widths, long lengths of yarn on the beam, versatility in yarn used, high-quality warps, and versatility in unit capacity. Inquiries may be addressed to T. H. A. Llewellyn, c/o Luster Fibres, Ltd., 350 5th Ave., New York, N. Y.

Any width of warp from 14 to 84 in. can be wound on beam tubes by use of one of three sizes of headstock offered. Beam diameter is up to 21 in. It is said that beaming full width in one operation permits the yarn to lie in its most desirable state for knitting, and any variations in temperature and humidity are constant across the whole width of the beam. Other difficulties, as matching of beam diameters, rubbing of yarn on beam flanges, and flange deflections are avoided.

The warper drive originates from a 5-hp. electric motor coupled directly to a Carter hydraulic variable-speed gear unit. The variable-speed gear is connected to the beam drive through an electro-magnetic clutch controlled to give a constant yarn-winding speed regardless of beam diameter within the limits of 6 to 21 in. by tacho-generator control from one roller of the tension unit. The beams are checked by a brake (in the case of the 84-in. headstock, 2 brakes), and the stop motion operates sufficiently quickly to prevent a broken end being wound on the beam, the manufacturer states. At the same time, the motor drive is disconnected at the electromagnetic clutch. The beam tube or section bobbin is held in quick-release chucks.

Constant-winding speeds range from 100 to 450 yd. per min. (for 6- to 21-in. beam diameters). Headstocks are mounted on casters to allow them to serve more than one creel.

Tension units are designed to accommodate three yarn-driven rollers which can be braked at will to apply tension to the yarn. As these rollers speed up due to increasing beam diameters, the tacho-generator connected to one of the rollers alters the Carter control to maintain the constant yarn speed.

Each tension unit is fitted with a warp-stop motion of the electric-dropper type, and is positioned not less than 60 in. from the headstock to minimize the chance of a broken end being wound in the beam.

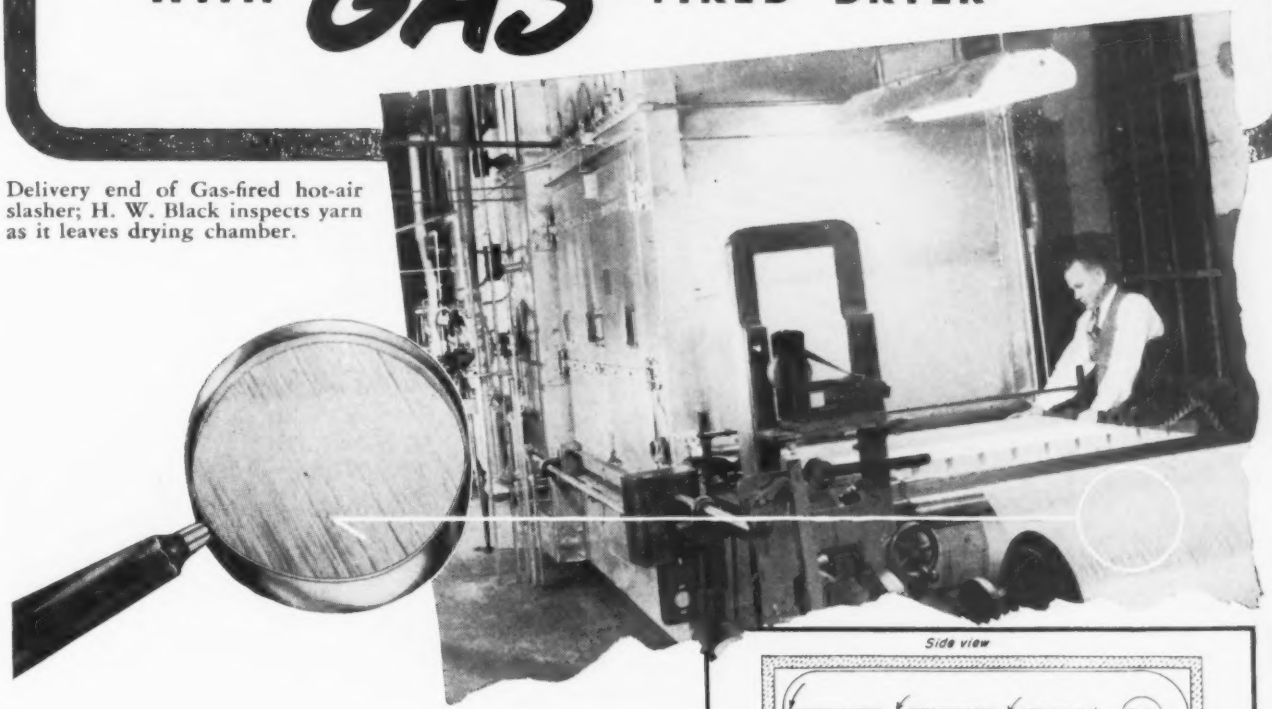
Creels are of the non-magazine type, are arranged in "V" form, and incorporate tension devices which will permit running viscose and acetate filament rayon.

Section beams in use on knitting machines other than the F.N.F. can be adapted to the warper headstock in some cases.

Bracket Permits Throwing On Any Type Frame

A unique spindle bracket for throwing frames has been announced by the Marquette Metal Products Co., Cleveland, Ohio. This new bracket makes it possible to use Marquette roller-bearing spindles for throwing rayon, nylon, and silk on practically

IMPROVING FINISH AND INCREASING SLASHER PRODUCTION WITH GAS-FIRED DRYER



Delivery end of Gas-fired hot-air slasher; H. W. Black inspects yarn as it leaves drying chamber.

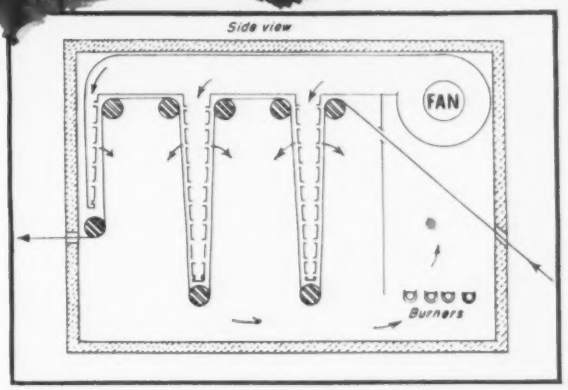


Diagram of drying chamber illustrates simple arrangement of air-heating GAS burners, and slotted duct through which air is distributed over travelling yarn.

Examine the yarn as it leaves the dryer and you'll note the round and smooth strands, the improved finishing, in the production-line slashing operations at Avondale Mills, Birmingham, Alabama.

One of the most important features of this slasher is the drying chamber with its Gas-fired air-heating system. Accurate GAS combustion controls, co-ordinated with moisture regulators, permit:

- Closely controlled moisture regain
- Variations in rate of drying
- Adaptability for many yarn weights

Superintendent W. E. Williams points out that **"Improved finish is only one advantage resulting from this installation. With increased production at lower cost the new slasher has demonstrated its versatility and economy regardless of the type of yarn being processed."**

There are many advantages to be gained from the use of GAS for textile processing. GAS is flexible and clean; modern Gas Equipment can be installed without costly accessories, and serviced by any skilled maintenance mechanic.

Wherever you need heat for textile processing you need GAS, and that's the time to call your local Gas Company Representative for information and recommendations.

MORE AND MORE... THE TREND IS TO GAS FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

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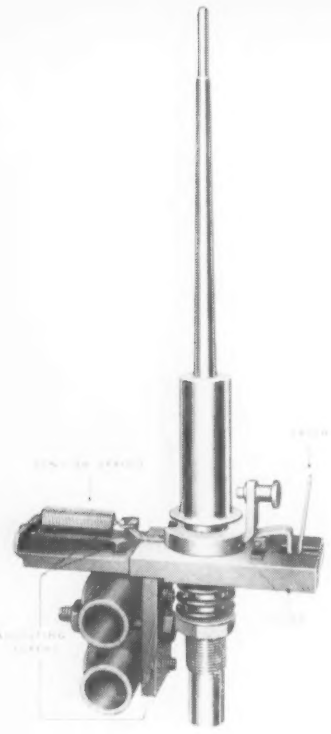


***A spring-tension slide** carries the spindle on a supporting bracket toward and away from the driving belt in a straight line.*

any type of frame. It replaces the swing-arm-and-frame bracket, and permits enough clearance for the long-shank Marquette spindle.

It consists of a slide which carries the spindle on a supporting bracket toward and away from the driving belt in a straight-line movement. A simple coil spring provides even tension in bringing slide and spindle into contact with the belt. A latch is used for operation of the slide, disengaging the spindle and anchoring the slide and spindle in neutral position while bobbins are being doffed. The latch is easily released, whereupon the tension spring carries the slide forward so that the spindle comes in contact with the driving belt.

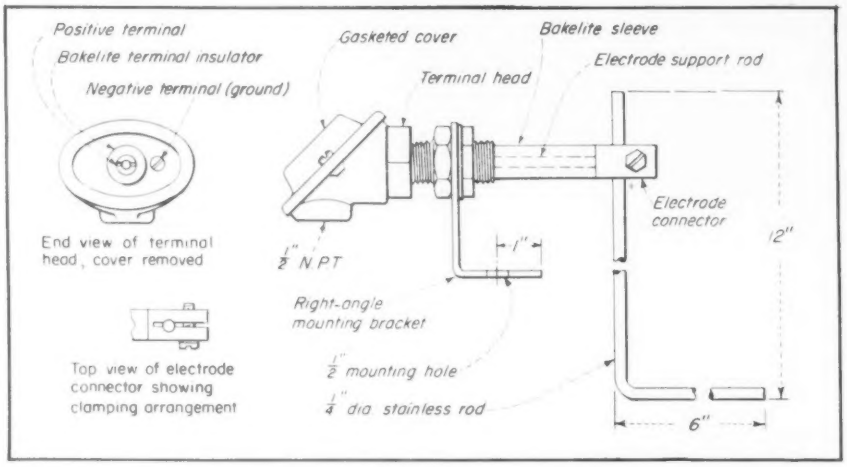
The bracket is designed for mounting on rail tubes (as illustrated), or it can be supplied for mounting on flat rails.

According to the manufacturer, this new spindle bracket offers the throwster these important advantages: A standard Marquette spindle, operating at high speed with a minimum of vibration, can now replace the conventional plain-bearing, short-shank spindle. Considerably less space is required for operation than a swing-arm bracket, which means that larger bobbins can be used without interference from separators. Spindles are easily plumbed and stay plumbed, as the bracket has no pins or bushings. Spindle speed is uniform and accurate as a result of constant, even, spring tension. Very little lubrication is required; no dirt or muss can accumulate from over-oiling or vibration corrosion so common to swing-arm brackets.

Level-Detector Mounting Increases Reliability

An improved electrode and mounting-head assembly for size-level applications has been developed by the Brown Instrument Div. of Minneapolis-Honeywell Regulator Co., 4509 Wayne Ave., Philadelphia 44, Pa. The new assembly, according to a Brown company announcement, will decrease maintenance, service, and installation problems.

Outstanding features of the new assembly are said by the company to include: (a) prevention of false signals, (b) more reliable electrode-height adjustment, (c) easier attachment of the assembly to the rim of a size box, (d) improved operation in wet locations, (e) increased applicability of the assembly with higher-resistince detecting-relay devices and (f) positive electrode alignment during clamping. Availability is immediate on all orders for size-level control equipment.



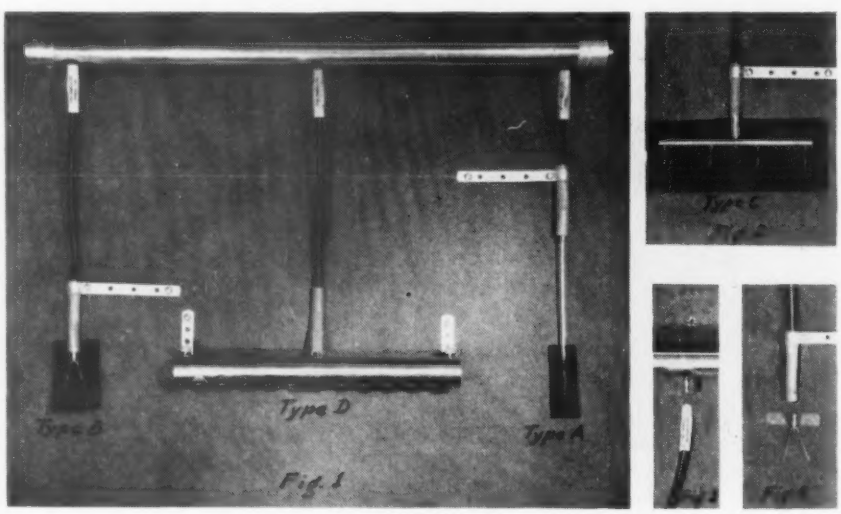
***Increased reliability** and increased applicability of level-detectors are claimed as advantages of this new mounting.*

Versatile Static Eliminator Useful in Many Operations

As versatile as an extension cord is the Octopus bar, a new static eliminator announced by The Simco Co., 920 W. Master St., Philadelphia, 22, Pa. Designed especially for use on yarn-preparation machinery, the new eliminator makes itself most useful on machines where the sliver, roving, or yarn delivered is widely spaced. The metal-encased bar is mounted above the machine at such a height that it will be out of the operator's way. Only the branch applicator cables, furnished in any length desired, drop down to the working area.

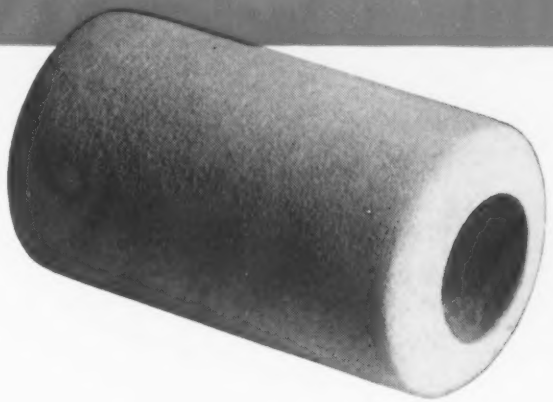
The applicator cables are attached

(*Continued on page 240*)



***Static-eliminators** of several types, all with plug-in connections, are applicable to many uses.*

NO EYEBROWS LESS CLEARER WASTE



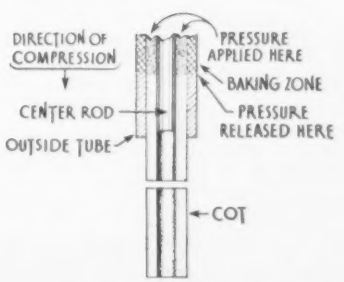
Armstrong's Cork Cots have extra friction

The highly frictional surface of Armstrong's Cork Cots eliminates eyebrows. This extra "grip" carries clearer waste well back onto the clearer boards, so there's no danger of waste's dropping off or being nipped into the work. Thus clearer picking is minimized and the number of slubs is reduced. At the same time, cork reduces clearer waste as much as fifty per cent.

The extra "grip" of Armstrong's Cork Cots also gives you more uniform drafting and helps produce top-quality yarn. Their resilience and uniformity mean fewer ends down per thousand spindle hours, so your operators do less piecing up. These cots recover quickly from most laps and hard ends. They won't flow under roll weighting. And since they are extruded, they have no hard or soft spots to grip the yarn unevenly.

Ask your Armstrong representative for samples, prices, and additional information on Armstrong's clean-running Cork Cots. Or write today to Armstrong Cork Co., Textile Products Dept., 8304 Arch Street, Lancaster, Penna.

EXTRUSION PROCESS PRODUCES SEAMLESS CORK COTS



Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger yarn.

Better running work . . . more poundage

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Latch Knitting Needle Patented in France in 1803

There has been some question as to the inventor of the latch knitting needle. Many authors have given the name of Matthew Townsend, Leicester, England, as the inventor, fixing the date as 1858. Others have named David Mouling as the inventor, with the date being fixed also at about 1858. It seems, however, that the latch needle was invented in France at a much earlier date.

In following clues indicating the possibility of invention of the latch needle earlier than 1858, I finally appealed to the Smithsonian Institute, Washington, D. C. Research at the Patent Office library disclosed among French patents (1re Series, vol. 2, p. 200, and vol. 21, p. 350) that Pierre Jeandeau patented a latch needle on March 15, 1803. The number of this patent was 137. Two additions to this patent followed, the first dated April 3, 1804, and the second April 25, 1806. The number assigned to the 1806 patent was 1900. The drawings accompanying the description of this patent give a good illustration of a latch needle.

A patent on a latch needle was applied for in the United States on March 28, 1848 by James Hibbert, Providence, R. I. Evidently, the U. S. Patent Office did not find a copy of the Jeandeau patent at that time and granted patent No. 6025 to James Hibbert, Jan. 9, 1849. As late as 1866, Walter Aiken sued Thomas Dolan of Philadelphia, Pa., for infringement of the Hibbert patent. During the trial, Mr. Dolan testified that he was certain that latch needles had been used in Europe prior to 1848, but he was unable to furnish documentary proof and had to pay Mr. Aiken a small sum for damages.

The drawings of the Hibbert patent show latch needles with straight shanks and no butts. All latch needles were made in this manner and were rigidly secured in the machines until the invention of the circular Herrick Aiken knitting machine in 1854 (which was never patented) and the flat knitting machine by John Pepper at Franklin, N. H., in 1855.

Apparently, latch needles were considered quite valuable when the first assignment of the Hibbert patent was made on June 21, 1853. The assignment reads as follows:

"Provided always—and this assignment is on the following conditions, viz:—That the said Darius C. Brown, and his legal representatives, shall well and truly pay, or cause to be paid, to the said James Hibbert, or his legal representatives, the sum of one and a-half dollars per needle for each needle that he, the said Darius C. Brown, or his legal representatives, hereafter construct or use, or may cause to be constructed or used, to which my improvement is attached and applied as aforesaid."

The earliest price I could find in the Aiken papers was $5.00 per hundred, postpaid, in 1861; which compares favorably with a recent price of $3.90 for 36-ga. needles.

Probably, James Hibbert was not successful in manufacturing latch needles. Soon after Mr. Hibbert's death, Herrick Aiken purchased the Hibbert patent for $50. No record was found to show when Herrick Aiken transferred the latch-needle business to his son Walter, but the needles were manufactured on the second floor over Herrick Aiken's shop on East Bow street, Franklin, N. H. Walter Aiken designed and patented machines for making the needles. When the

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Who's the wise guy that's been putting snazzy French post-cards in this machine?"

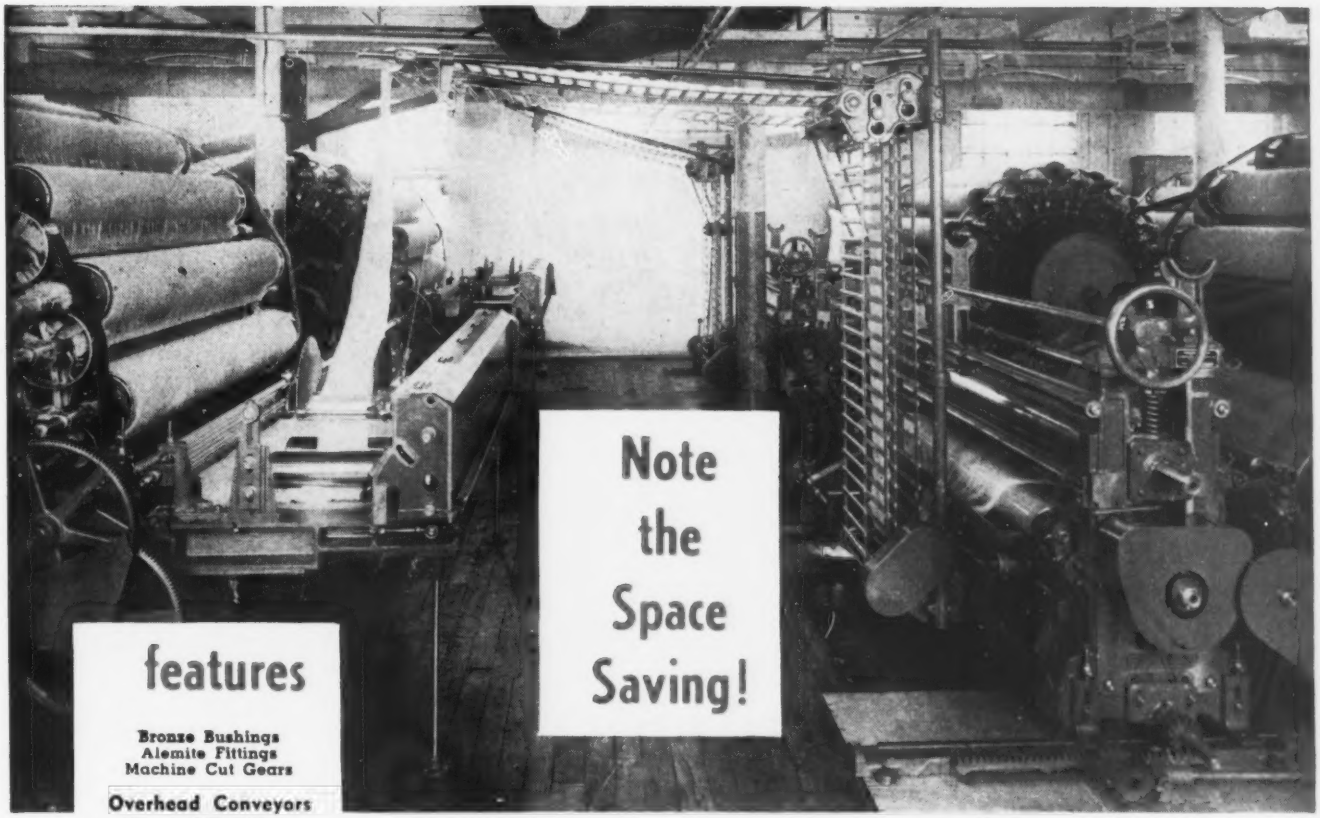
Duesberg-Bosson of America, Inc.

—manufacturers of the new

INTERMEDIATE CENTER

BROAD BAND FEED

TO FIT THEIR PATENTED PERALTA MACHINES AND EXISTING CARDS



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Width of Woolen Band Adjustable—2" to 11"

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Prevent Web from Sticking

• The Intermediate Center Broad Band Feed was designed by our engineers in Providence to fit the Peralta Machine. Also sold separately. Includes many improvements. Saves valuable floor space between Peralta Machine and the Feed Table.

Prices and Delivery on Request

Duesberg-Bosson of America, Inc.

351 Harris Avenue, Providence, R. I.

Hibbert patent expired in 1863, Walter Aiken purchased the renewal for $2,000, thus continuing sole rights to make the latch needles until the expiration of the patent on Jan. 9, 1870.

We may safely assume that the early needles required much hand work. The Hibbert drawings show that the hooks were pointed like crochet hooks and the latches were flat, without spoons to cover the hooks. The needles were made at the Aiken factory until about 1871.

Probably before 1860, the manufacturers of knit goods combined and unsuccessfully contested the validity of the James Hibbert needle patent; and during the litigation, Mr. Aiken reduced the price of the needles.

After the expiration of the renewed Hibbert patent in 1870, activity in latch-needle manufacture stepped up, with Franklin, N. H., remaining the center of the industry. The Franklin Needle Co. was organized in 1874 and incorporated in 1882. The Mayo Knitting Machine Co. was organized in 1896 and began making latch needles about 1897. It was succeeded in 1901 by the Acme Knitting Machine & Needle Co., Inc.

During World War I, there was a great demand for latch needles because the supply from Germany was cut off. In 1917, the Seawill Needle Co. was started at Tilton, N. H., was moved to Franklin in 1920, and continued to make latch needles until 1926, when the machinery was sold to the Arrow Needle Co. of Manchester, N. H. In 1919, The Nevin's Needle Co. began to make latch needles at its factory on East Bow street, Franklin, and continued until about 1930, when a change was made to shoe needles and other products.

Although the latch needle is a simple mechanism, it has been improved in several ways since 1854. Some of these improvements were the addition of the spoon to cap the hooks, streamlining the latch, and the manner of riveting. About 1922, screw rivets to hold the latch and prevent the cheeks from spreading and leaving the latch too loose were introduced. About 1940, a way by which the walls adjacent to the latch were electrically depressed and welded together to form a pivot for the latch was found. Excellent results have also been obtained by near welding to form a pivot. These last two methods provide stronger cheeks for the needles because no metal is removed at the pivot by drilling, as is required with all styles of rivets. *(R-398) W. A. Simond, Franklin, N. H.*

Weaver in India Offers Information

I am interested in exchanging technical information with men employed in cotton weaving in the United States. I am employed as weaving superintendent of Delhi Cotton Mills, Delhi, India. We have 1,800 looms and weave 60,000 lb. of cloth a day in two 8-hr. shifts. Our mill is a vertical organization, and we manufacture many kinds of fabrics.

Before transferring to Delhi Mills, I was weaving superintendent at Lyallpur Cotton Mills, Lyallpur, which is in the same organization as the Delhi Mills. *(R-401) P. S. Singal, Delhi, India.*

TEXTILE WORLD will gladly furnish the full address of Mr. Singal to interested persons.—Editor

Educational Campaigns Can Be Better Scheduled

One of the points learned by mill management during the war was the difficulty of conducting campaigns at a constantly high level of interest. Supervisors and workers could be interested in accident prevention, reducing absenteeism, or improving quality of output by concentrating on such matters for varying lengths of time. Eventually the talks, posters, and other appeals could do little more than maintain modest improvements in the situation.

The need for similar campaigns exists now, and the question is how can they be built up and maintained to accomplish the objectives?

The most practical method consists of: (1) a continuing program that never lets the subject drop from the worker's mind, and (2) a planned series of peaks in these programs to arouse enough interest for absorbing new ideas and reviewing the old ones.

Placing the peaks of intensified education at the right spots means that accident prevention will avoid the occasional waves of trouble by making workers accident conscious at the proper time. Campaigns that follow trouble are timed too late to prevent what has already happened, and they will have lost their force before the next period of greatest need.

It is probable that something approaching definite cycles can be determined from records on hand. Rough schedules should be worked up for use in recognizing the trends of accidents, absenteeism, below-par workmanship, and similar problems. In this way, intensified educational campaigns could be timed to come ahead of expected trouble. Timing, of course, will not be perfect; but it will be an improvement over the old method of allowing campaigns to die of monotony or their peaks to come and go without any relation to needs.

Our local newspaper recently published some interesting facts about the bus company. Shop records showed that fan belts lasted 75,000 miles. The bus company therefore replaces them at 72,000 miles to avoid almost certain trouble a little later. This same principle was applied to other details of operation. This is the sort of thing that mill management might well consider in connection with recurring problems of personnel.

People are less predictable than machinery, of course. Yet this fact does not indicate that certain trends of behavior cannot be predicted and anticipated with a workable degree of accuracy. A campaign scheduled to reach a peak of enthusiasm shortly ahead of the period when difficulty might reasonably be expected can be a valuable asset. *(R-400) George M. Dodson, Harrisburg, Pa.*

Loose Chain on Wrist Is an Unsafe Practice

The loose chain on the trainee's right wrist is pointed out as an accident hazard.

As you know, we supervisors in mills are constantly reminded of the importance of safety and of impressing safety upon all employees. With this fact in mind, I noted that the picture on the front cover of the December, 1947 issue of TEXTILE WORLD unintentionally showed an unsafe practice.

You will note in the reproduction of that photograph that a weaving instructor is observing a trainee repair broken filling. You will note also that the trainee is wearing a loose chain on his right wrist. Many of the warnings we get in regard to accident hazards concern wearing such chains, rings, loose clothing, and loose hair.

While the instructor seems attentive enough to the task the trainee is performing, he should also be careful to give the trainee a good safe start as well as a good technical start. *(R-399) W. G. Liske, Stafford Springs, Conn.*

CLEANER FLOORS *in* LESS TIME

with FULLER TEXTILE BROOMS

MADE ESPECIALLY FOR TEXTILE MILLS

WELL-KNOWN textile superintendents furnished the ideas for a good broom especially adapted to conditions in the textile industry. The result of their suggestions, plus Fuller's brush-making "know-how", is a superior sweeping tool — the Fuller Textile Broom. Light in weight. The extra wide flare sweeps large floor surfaces quickly. Carefully selected fibers provide a durable sweeping surface that outwears ordinary brooms, yet flexible enough to remove all lint and scraps with ease. A light weight metal casing increases the broom's life by protecting its shoulders when sweeping under or around machinery. For true economy in *your* mill, make sure you get the easier-handling, longer-lasting Fuller Textile Brooms.

TELEPHONE your Local Fuller Branch Office or write

The FULLER BRUSH Co.

INDUSTRIAL DIVISION

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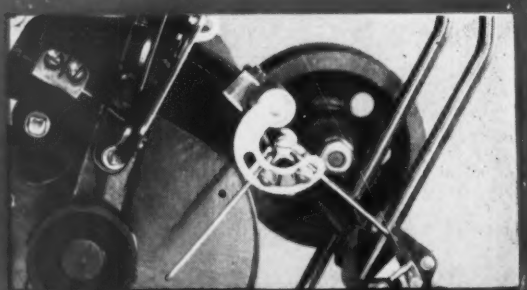
In Canada: Fuller Brush Co., Ltd., Hamilton, Ont.

The *flat base* identifies cones wound on the Universal Precision Winding Machine — used in more than 90% of all cases where synthetic filament yarn is coned.

Better Packages . . . Higher Production . . . with the all-purpose Winding Machine

LEESONA
REG. U.S. PAT. OFF.

BETTER PACKAGES WITH THIS TRAVERSE FRAME BACK
Yarn delivery point is the same from base to nose of cone, giving a constant guide pressure on the package. This can only be achieved with Universal's type of traverse frame back — cut on a spiral so that the thread guide, pivoting around center line of traverse bar, follows the cone shape.



HIGHER PRODUCTION WITH BREAKAGE LEVER BALANCE
When winding light or fragile yarns with minimum tension, the Breakage Lever Balance is used to eliminate any oscillation of the Breakage Lever which might release tension and cause the spindle to stop unnecessarily. It accurately balances the Breakage Lever Assembly in running position, and gives a delicate yet positive action on the Stopping Lever.

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Kinks AND SHORT-CUTS

Movable Cloth Folder Saves Much Handling

✻ **PRIZE WINNER FOR APRIL**
(February contest)

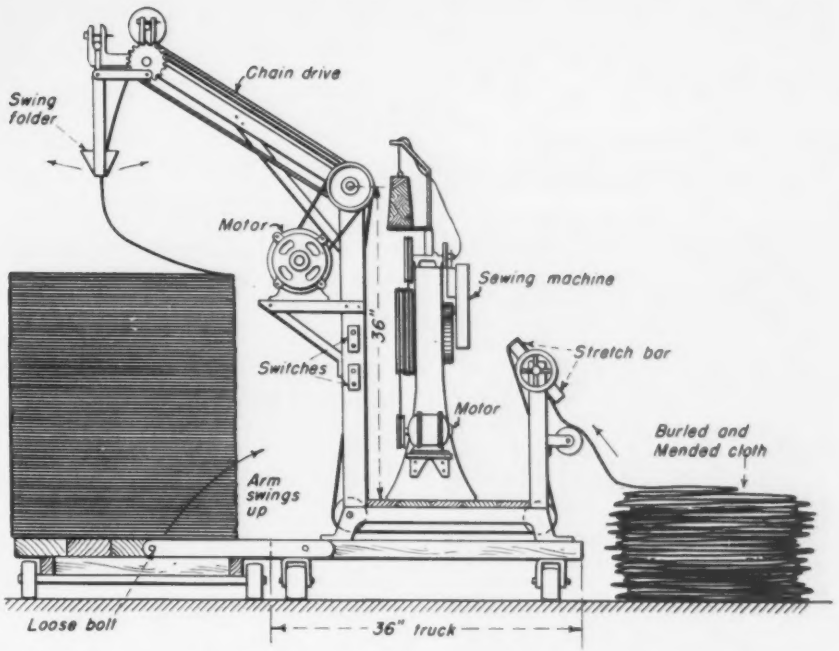
Much damage to cloth is done in handling rolls, particularly in cloth rooms where the floors are in bad repair and the heavy cuts of cloth are manipulated on the floor. Even if no damage is done to the cloth, there is considerable lifting and moving of cuts to various points of the department.

A movable cloth folder for use in the mending and burling room can eliminate most of the roll handling and the damage done to the cloth during the handling. A folder for this use is shown in the accompanying sketch.

Burlers and menders usually handle cloth in sets consisting of six or eight cuts. Unless a very large run of a particular style of cloth is to be processed, these sets of six or eight cuts are fulled separately. When a burler and mender finishes a set of cloth, her yard marks must be placed on each cut in the set and the cuts sewn together for a continuous run. The goods, now loose, must be taken up, carried to the cloth winder or folder, and prepared for the dry-cleaning machine.

If a movable folder is available, the folder operator can back the machine up to the pile of cloth and fold it onto a flat cloth truck, on which it is transported to the dry-cleaning machine. In this way, considerable handling of the cloth is avoided. By having a sewing machine mounted on the folder truck, the operator can sew the cuts together while the cloth is being folded.

A flat cloth truck can be used for mounting the folder. In order to hold the folder truck and a cloth truck in the proper position during the folding operation, attach an arm to each end



***A portable cloth folder** and sewing machine mounted on a flat cloth truck so that they can be moved to any point of the burling and mending room save much handling of cloth between the burlers and dry-cleaning machine. Damage that often occurs when the cloth is wound into a roll and handled on rough floors is avoided.*

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Look over the kinks in this and other issues. They will offer you some useful ideas, and they will also suggest other ideas you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments that are of merit—anything that will help production, improve quality, or cut costs.

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1. No limit to number of entries.
2. New contest every month. Each contest closes with kinks received last day of the month. Prize winner is published the third succeeding month.
3. All kinks will be paid for on acceptance. Illustrations, when submitted, do not need to be finished drawings (penciled sketches are satisfactory); but they should be clear and complete. Prize awarded to winner is sent to him after publication. Good photos are acceptable.
4. Previously published material is not eligible for prize or publication.
5. Unless you advise to the contrary, we assume that we may sign your name to your kink when published.
6. Judges of the contest are editors of TEXTILE WORLD. Their decision is final.
7. Send your entries to either address:

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KINKS & SHORT-CUTS
(*Continued from page 163*)

of the folder truck, as indicated in the sketch. These arms should be made so that they will swing up out of the way when the machine is not in use. *(K-837) Paul W. O'Neil, East Chelmsford, Mass.*

Boarding Operators Had Headaches From Light

***Frosted glass** placed under the tubes of these fluorescent lights eliminated glare that was causing headaches and loss of production at the boarding process.*

It is well known that light is critical at the boarding operation in a full-fashioned hosiery mill. To provide adequate light at our battery of boarding machines, we installed a line of overhead fluorescent lights. The candle power of the lights were adequate for the boarding operators to perform their tasks; but soon after the lights were installed, the girl operators began to complain of headaches. We studied every condition of the boarding process and decided that the trouble was the glare of the fluorescent lights.

In placing the hose on a boarding form and taking it off again after it has been boarded, the operator must look upward, almost directly at the line of lights, as indicated in the accompanying photograph.

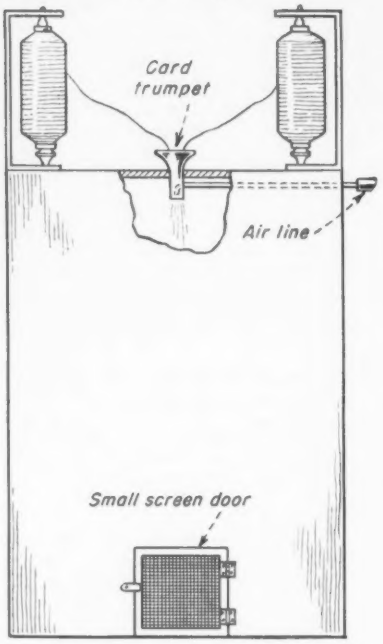
We equipped each of the light reflectors with frosted glass below the fluorescent tubes in order to diffuse the light and thus eliminate glare. The complaints about headaches stopped at once, and production at the boarding process increased noticeably. *(K-814) R. J. James, Charlotte, N. C.*

Clean Choked Heddles With Steam and Water

Dry clots of warp size sticking in harness heddles cause a good bit of trouble in leno weaving. Broken ends that result in floats frequently can be traced to these "gummed-up" heddles. It is often found that the clots of dry size have sharp edges or points that can cut the filaments of a rayon yarn. Broken filaments, of course, lead to broken yarn.

We make a practice of closely inspecting our heddles before a new warp is drawn in. If there are any size clots on them, we put the heddles in a metal drum and clean them thoroughly with steam and hot water. *(K-833)*

Straightening Bad Roving Speeded by Compressed Air



This bad-roving box, thought to be an improvement over a similar compressed-air box described in a former kink, approximately doubles the output of a man straightening up bad bobbins of roving.

Some time ago you published a kink that explained the construction and use of a stand and waste can for using compressed air to straighten up bad roving in the card room [Compressed Air Removes Bad Roving From Bobbin, TW, July '45, p. 142].

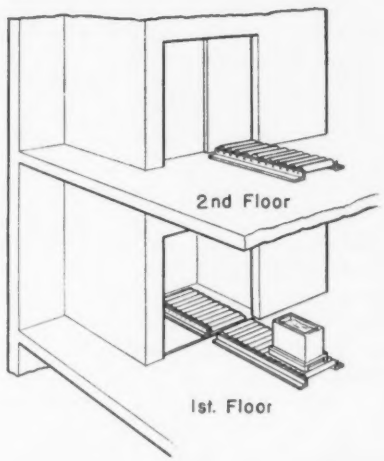
Although the set-up shown in the accompanying sketch serves the same purpose as the former kink, we have found that using a standard card calender-roll trumpet in the center of the lid and placing the compressed-air outlet below the lid causes the roving to unwind with fewer breaks.

The waste box we use is 1½ ft. square and 2½ ft. high. We have two holders on the lid, permitting two bobbins of bad work to be run off at once. A third bobbin can be held in the operator's hand and run off while he is not busy replacing the two bobbins on the lid. We have found that more than two bobbin holders on the lid are more or less useless unless more than one operator attends them.

The extension from the end of the compressed-air line to the trumpet is a small copper tube. One end of it is inserted in the air line, and the other end is inserted in a hole in the side of the trumpet and pointed down so that the flow of air is through the opening in the trumpet and into the waste box.

We have found that the use of such a box has two advantages: (1) it approximately doubles the number of bobbins of bad roving a bad-work man can straighten up; and (2) it tears up the waste roving as well as a waste machine would, so that the waste is immediately ready for reprocessing in the production run. *(K-825)*

Conveyor on Elevator Makes Loading Easy



***Horizontal roller conveyors** on an elevator and at the elevator-entry point on the mill floor are useful where heavy boxes or palletized loads are moved by elevator. The handtruck or lift-truck operator who moves the load to the elevator deposits it on the rollers, and the elevator operator moves it over the rollers onto rollers on the elevator. A third conveyor at the exit point permits easy unloading.*

In mills where heavy packing boxes or tiered pallets of material are moved upstairs or downstairs on elevators, roller conveyors for loading and unloading an elevator are useful. Often these heavy loads are trucked to the elevator on a handtruck or a power lift truck, and the trucker must wait for the elevator. Frequently, the load must be allowed to remain on the handtruck, and the trucker must ride

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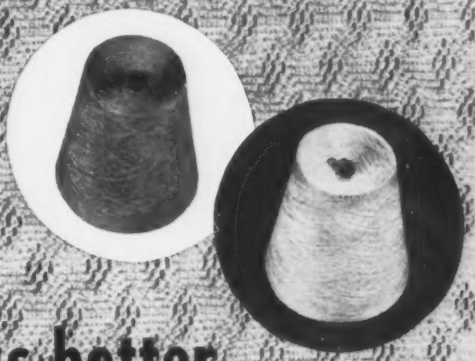

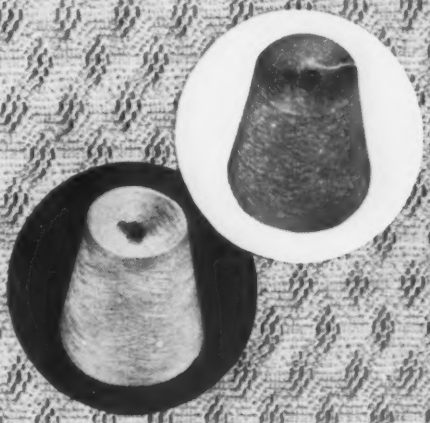

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KINKS & SHORT-CUTS

(Continued from page 164)

the elevator to the other floor and unload the box or pallet.

Such practice, of course, causes considerable loss of time. The use of roller conveyors, shown in the accompanying sketch, saves this lost time. The trucker unloads his box or palleted load on the conveyor, where it remains until the elevator operator pushes it over the rollers onto other rollers in alignment on the elevator. When the load is taken to the second floor level, the operator stops the elevator in such a position that the roller conveyor on the elevator is level with rollers on the second floor. He then pushes the load off the elevator onto the rollers immediately in front of the elevator, where it remains until the trucker on the second floor is ready to move it.

Roller conveyors for this purpose can be made by using angle-iron frames fastened to the floor with lag screws and any convenient diameter of shafting available. For example, 6-in. angle iron and 3 -in. shafting could be used.

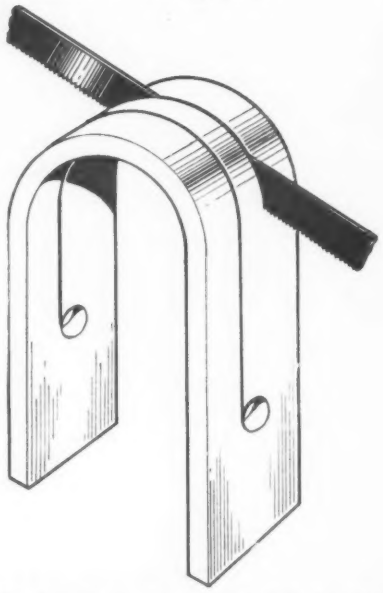
The shafting should be cut in lengths to accommodate the widest box or pallet usually trucked. If the rollers are placed in the frame so that the tops of the rollers are higher than the frame sides, it is not necessary to have the rollers as long as the box or pallet is wide. However, if the sides of the frame extend upward past the rolling surface of the conveyor, the rollers must be longer than the width of the load.

Turn down an inch or two of each end of all the rollers to about ¾ or 1-in. diameter, and drill holes in the frame sides for each of these turned-down ends. With one side of the frame fastened to the floor, insert one end of all the rollers in the conveyor into the drilled holes in the frame side. Now insert the other ends of the rollers into the holes in the other side of the frame, place the frame side parallel with the other side, and fasten it to the floor.

This arrangement comprises a complete conveyor. It is advisable to brace the frame sides with end pieces or with shallow crosspieces underneath the rollers. The holes in the frame sides should be ¼ or ½ in. larger than the roller journals in order to insure free turning of the rollers as the load is pushed over them.

The conveyor on the elevator and on the other floor of the mill can be made in the same manner. (K-817)

Bend Flat-Bar Stock To Cut a Long Slot



***Cutting a long slot** in a piece of flat stock is fairly easy by the method shown here. Drill holes in the stock at the points desired for the ends of the slot. Then bend the stock so that a hacksaw blade can cut down both sides. Saw down the bent stock in a plane parallel with the edge of the stock at a distance from the edge equal to the distance from the edge of the stock to the near sides of the drilled holes.*

When this cut is completed, make another cut on the other side in a similar manner. When the second cut is completed, the metal between the cuts will fall out. The flat stock is then ready to be straightened again. (K-811) L. Kasper, Philadelphia, Pa.

Botany Half-Hose Knitters Can Save on Linkage Waste

In the manufacture of seamless botany men's half-hose, the practice in England is to knit a few courses of roving to assist the linker. These courses are subsequently cut away on the linking machine and go into waste.

A worth-while saving could be made if these courses were knitted with condenser-cotton yarn. For example, on a year's production of 160,000 doz., which is a small quantity for most manufacturers, the saving could be calculated as follows:

Amount of waste = 160,000 × 1 oz. =10,000 lb.

Difference between cost of first-quality botany wool and waste = 50¢ (approximately)

Value of year's waste = $5,000

Difference between cost of condenser-cotton yarn and waste = 10¢ (approximately)

Value of waste = $1,000

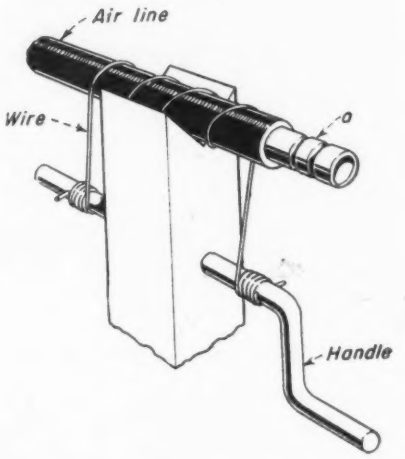
Saving by using cotton instead of botany wool = $4,000. (K-819) *H. Wignall, Leicester, England*

Use Disks on Pirns To Aid in Quilling Nylon

In quilling nylon yarn from pirns, trouble is often encountered with the ends breaking excessively. This same trouble has been corrected when the supply package is a cake of yarn by using a disk at the top of the cake to cause the yarn to balloon off the cake to prevent breakage.

Disks can also be used with pirns. We have tried it and found that it works as well with pirns as with cakes. The disk we use overlaps the pirn about ⅛ in. and is held in place by a spring-wire holder inserted in the top of the pirn.—(K-832)

Air-Hose Repair Aided by Holder



***The wire loop**, passed around the end of a compressed-air hose that is to be repaired, will hold the hose firmly against the notched holder while a metal union is inserted in the end of the hose.*

It is sometimes necessary to repair a compressed-air hose. Such a repair is usually made by cutting the damaged section out of the pipe and inserting a metal union in the two ends of the pipe, as indicated at a in the accompanying sketch.

In making such a repair, it is difficult to hold the hose and simultaneously stretch the inside diameter of it sufficiently to force the metal union inside. For holding the hose and assisting in the stretching, we use the device shown in the sketch.

The device consists of a holder made of a 2-in. bar of cast iron or steel 14 in. long. This piece of stock is notched at the top so that the hose near the end into which the union is to be inserted will fit into the notch. A handle, made of ¼-in. rod, fits into a hole located near the notched end of the holder. This hole permits the handle to be turned somewhat as a crank. On

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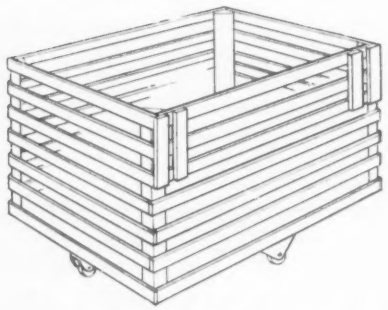
KINKS & SHORT-CUTS

(Continued from page 166)

each side of the holder, an end of a loop of strong piano wire is fastened to the handle so that when the handle is turned the wire will wrap around the handle.

To use the device, wrap the loop of wire around the hose as shown in the sketch. Turn the handle, wrapping each end of the wire loop around the handle and pulling the hose down into the notch. When the wire has been tightened sufficiently, the end of the hose will be held securely until the union can be inserted. *(K-824) J. B. Boyter, Fitzgerald, Ga.*

Tricot Cloth Box Has Detachable Gate



***Strain in lifting cloth rolls** is reduced by this detachable gate in the side of the cloth box used in tricot knitting room. The box is 36 in. deep, and removing 40 to 50-lb. rolls of cloth from the bottom of it formerly was a difficult job for girl inspectors. With this box, the girls have to lift the rolls only about 20 in.*

In our tricot knitting room, girl operators had a good deal of trouble handling rolls of cloth. When the rolls, which weigh between 40 and 50 lb., came off the machines they were placed in large boxes. Girl inspectors had to reach into the boxes and lift out the rolls. Since the boxes are 36 in. deep, the girls found it quite straining to lift a roll from the bottom layers in the boxes.

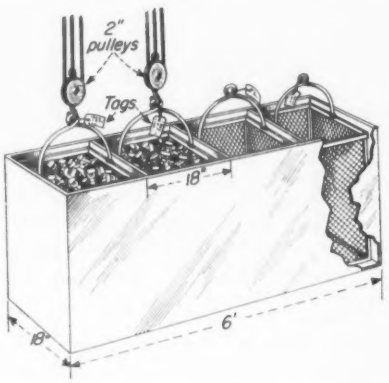
To make the job of removing the rolls from the box easier, we made a gate in one side of the box so that the gate could be removed and the girl inspectors would not have to reach or lift over the box side.

The boxes are 50 in. long by 40 in. wide. They are made of wooden slats 3½x¾ in. spaced about 2 in. apart. To make the gate, we cleated the three top slats on one side together as shown in the accompanying sketch. Either wooden strips or a flat cast-iron or steel bar can be used for cleating the slats. The three slats were then disconnected from the corner posts, which are made of a 4x4-in. timber sawed diagonally from end to end. At the two corners, gate stops were nailed so that the detached gate could be dropped behind the stops and held securely in place.

The boxes are loaded in the usual manner, and the inspectors lift off the top layers of rolls. After a few pieces have been taken off, the girl lifts out the gate, lays it aside, and proceeds to remove the bottom layers of rolls without the reaching and lifting formerly involved.

Care must be taken in devising the gate to guard against rough places that might damage the cloth. Only smooth lumber should be used; and if any rough places are made, particularly on the inside of the slats, they should be sanded down and shellacked. *(K-810) L. F. Turnbull, Daisy, Tenn.*

Four-Section Tank Aids Soaking of Pickers



***Soaking loom pickers in oil** can be facilitated by the use of this four-section soaking tank. Pickers are placed in mesh-wire frames and lowered into the soaking bath. Two or three days before they are needed, the pickers are raised above the oil and permitted to drain.*

We soak our loom pickers in oil before they are put in use, and we have found that a soaking tank similar to the one shown in the accompanying sketch provides a good means for soaking the pickers.

As shown in the sketch, the tank is 6 ft. long, 3 ft. deep, and 1½ ft. wide. It is made of sheet metal and divided into four 18-in. sections. The partitions forming these sections are welded to the tank walls and bottom so that oil in one section cannot flow into another section. Thus, the level of oil in each section can be maintained independently of the levels in the other sections. These four sections will hold approximately 1,600 pickers.

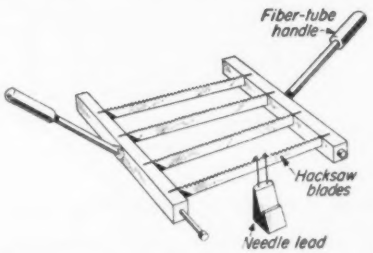
Our procedure in using the tanks is as follows: An inside frame made of mesh wire and equipped with a handle of ¼-in. rod is used for suspending the pickers in a tank section. This frame is 35 in. high and 17 in. square. About 400 pickers are placed in the soaking frame, oil is poured in the tank section, and the frame and pickers are lowered into the oil bath. If more oil is needed to cover the pickers, it is added after the frame is lowered to the bottom of the tank. A tag is attached to the handle of the frame; and on the tag is written the number of pickers placed in the frame, the date soaking began, and the date the loomfixers started using the pickers.

Two sets of overhead pulleys are needed for raising the frames as the pickers are used. These pulleys can be fastened to the ceiling or to a wooden frame constructed directly over the tank. The frames are raised out of the bath and the pickers are allowed to drain for two or three days before they are put in use. Thus, two frames are soaking and two are draining at all times.

If pickers from the frame in the first section of the tank are being used by the loomfixers, the frame in the second section is also raised to allow the oil to drain from the pickers. When all the pickers in the first frame have been used, the frame is refilled and lowered into the bath; and the pulley is placed on the third frame. Then while the third frame is draining, pickers from the second frame are used.

Standard oil drums can be used instead of the steel tank shown in the sketch. A wire frame made to fit inside a drum and used on the principle outlined would work as well as the tank we use. *(K-783)*

Leaded Spring Needles Salvaged With This Holder



***Salvage of leaded spring needles** by melting off the lead can be facilitated by suspending them from this holder in a lead pot until melting is completed. The crosspieces on which the beards of good needles are hooked are made of discarded hacksaw blades.*

Leaded spring needles for some knitting machines are cast with two needles in each lead. When the beard on one of the needles is broken,

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FABRIC TUBES FOR KNITTING MACHINES

PROBLEM

Fabric tubes fit into the center cylinder of seamless hosiery knitting machines. The interior surfaces of the tube must be smooth to prevent snagging of the hose. Tin, an expensive and scarce metal, had been the material commonly used for the construction of the tubes. Tin plate was unsatisfactory because it soon wore off. Manufacturing this part more cheaply required a material more plentiful and cheaper than tin, and one that would simplify fabrication assembly.

Extruded magnesium tubing, flared at one end, is used in this application. The tube is flared at one end with a fin staked in at an angle on the flared end. The use of magnesium substantially reduces the cost of fabricating this unit. Tin, which was used previously had to be rolled, soldered, and highly polished on the interior. Magnesium tubing needs only to be flared and given a smooth anodic treatment. As a result, the price of the fabric tube has been reduced from $3.73 per unit in tin to 80 cents per unit in magnesium.

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KINKS & SHORT-CUTS

(Continued from page 168)

the choice is either to discard both needles or salvage the good needle by melting off the lead by immersing it in a lead pot. A holder that will facilitate this latter salvage operation is shown in the accompanying sketch.

The holder can be made from used hacksaw blades, the dimensions being governed by the size of the lead pot in use. Secure as many hacksaw blades as are needed, and cut them to the length desired. In the blank ends of the blades, drill holes similar to the standard holes in the ends of the blades.

Now secure two lengths of square stock for use as the end pieces shown in the sketch. Drill a lengthwise hole in the center of each of these pieces of square stock. The size of these holes should be approximately the same as that of the holes in the ends of the hacksaw blades.

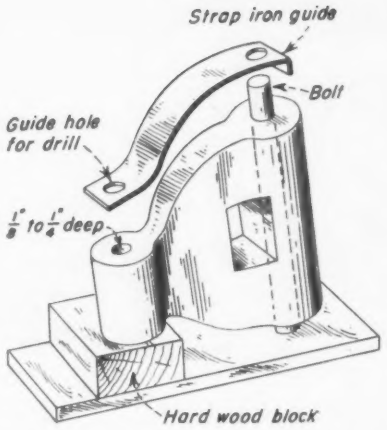
At intervals along these lengths of square stock, saw slots part way through so that the end of a hacksaw blade will fit into a slot and the hole in the blade will line up with the hole through the center of the end piece. When all the slots are cut, insert the ends of the blade and extend a pin through each end piece and through the holes in the blade ends. These two pins will hold the blades in place.

Make two handles from 5-in. lengths of steel rod, and attach these handles to the end pieces. It is best to cover the upper ends of the handles with 3-in. fiber tubes.

To use the holder to melt the lead off a good needle, hook the beard of the needle over a hacksaw blade. Place as many needles on the blades as desired or as the blades will accommodate. Suspend the needles in the lead pot by resting the holder on the rim of the lead pot. When the lead has been melted off the needles, shake the good needles off the blade into a container. The needles can then be recast for use. (K-784) *Albert M. Young, Jr., Philadelphia, Pa.*

Guide Aids in Drilling Shuttle-Point Holes

If only one shuttle is being run on a drop-box loom, it is desirable to form a hole in a new picker before it is placed on the loom. This hole should be in the exact center of the face of the picker, and the shuttle should be lined up with the hole when required adjustments are made to the rod



A hole in the exact center of a new picker can be formed by using this base and drill guide. The shuttle can then be aligned with the hole, and resetting of the check is not required.

stands. By forming the hole before the picker is installed, the shuttle will strike truer and a resetting of the check will not be necessary.

The usual method of forming the holes on a drill press results in the holes not being uniformly in the centers of the picker faces. Thus, every picker is different and requires special setting. We have found that we can do a better job of preparing the pickers for installing on the loom by using the guide shown in the accompanying illustration for making the holes in the pickers.

A piece of plywood is used as a base; and to it are secured a hardwood block and a bolt, as shown in the sketch. The bolt can be inserted so that it leans toward the hardwood block or the block can be sufficiently thick to permit the bolt to be inserted vertically. The important point is to position the bolt and block so that when a picker is slipped over the bolt, the picker head will rest squarely upon the block.

A drill guide is made from a length of sheet metal or strap iron. It should be bent so that it fits snugly against the edge of the picker. Near the bolt end of the strap iron, drill a hole to fit over the bolt; and bend the end of the strap so that it fits closely over the edge of the picker. With a picker in place as shown, fit the hole over the bolt, making certain that the bent end of the strap is over the edge of the picker. Now mark the other end of the strap at the point above the exact center of the picker head. Remove the strap, and drill a guide hole at the point marked.

The distance between the center of this drill-guide hole and the center of the picker-rod hole will vary according to the type of loom. Some looms require pickers with a distance of 2¾ in. between the picker rod and shuttle point; others require 2⅞ in. or 3 in.

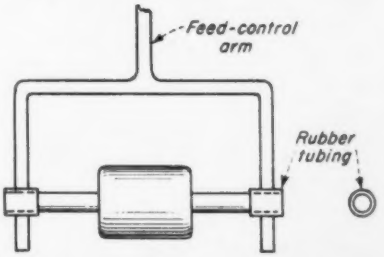
To use the guide, place the new picker over the bolt so that the picker head rests on the wooden block. Now place the strap iron over the bolt, and hold the strap iron steady on the edge of the picker. Drill through the guide hole in the strap iron until a shuttle-point hole ⅛ to ¼ in. deep has been made.

To insure uniformity, it is best for one man to make the holes in a large number of new pickers at one time. (K-749)

Long-Handle Brush Used for Applying Grease

A long-handle brush for increasing the reach may be useful in greasing pick cones, balls, rolls, and other loom parts. Since a paint brush is good for applying grease, a long handle attached to the brush handle is sufficient. The handle should be about 30 in. long for use on looms. **(K-786)**

Warper Feed-Roll Noise Stopped by Rubber Tubing



On the Barber-Colman high-speed warper equipped with the roll-type let-off system, there is an annoying noise caused by the feed roll (Catalog No. VWB 79-1) dropping on the feed-control arm (Catalog No. VWB 62). Most of this noise can be eliminated by slipping a short length of rubber tubing over each end of the roll. (K-723)

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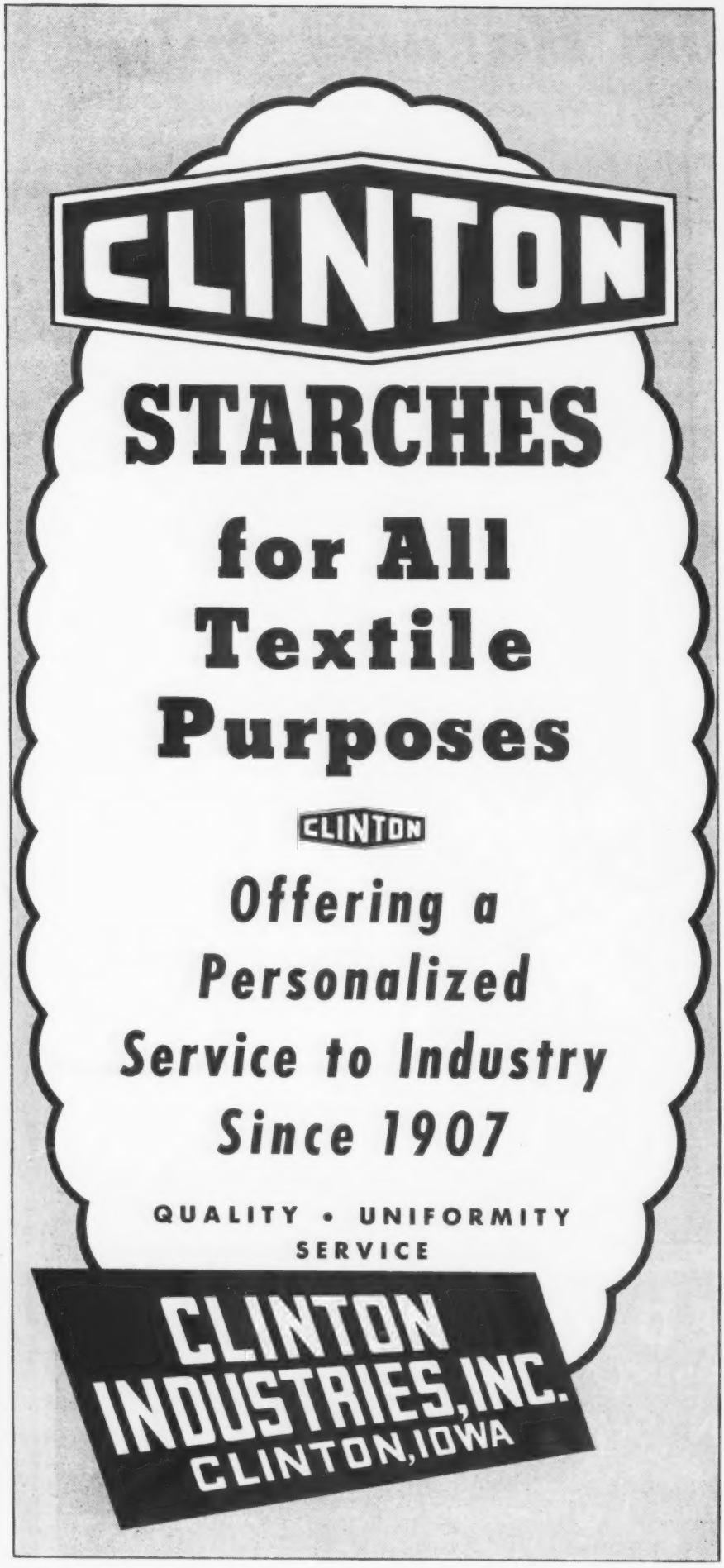


Questions and Answers

Is White Ground Mica Used to Break in Rings?

Technical Editor:

We have been advised that a number of textile mills are using white ground mica as a lubricant on twister rings, particularly during the breaking-in period of new rings. Do you have any information on this subject? (9231)

The use of ground mica for lubricating twister rings does not seem to be in general use, if in use at all.

Occasionally, when a new twister or spinning frame has been erected, the erectors mix a small amount of dry sulphur with oil and apply the mixture to the rings. The frame is run for a short length of time, and the sulphur-and-oil mixture is wiped off.

It is said that the use of the mixture smooths up the ring. Only one application is used, and care is observed in wiping it off so that no sulphur is left to interfere with the proper lubrication of the rings.

TEXTILE WORLD *invites discussion of this question, both the use of ground mica on rings and other methods of breaking in spinning and twister rings.*—Editor

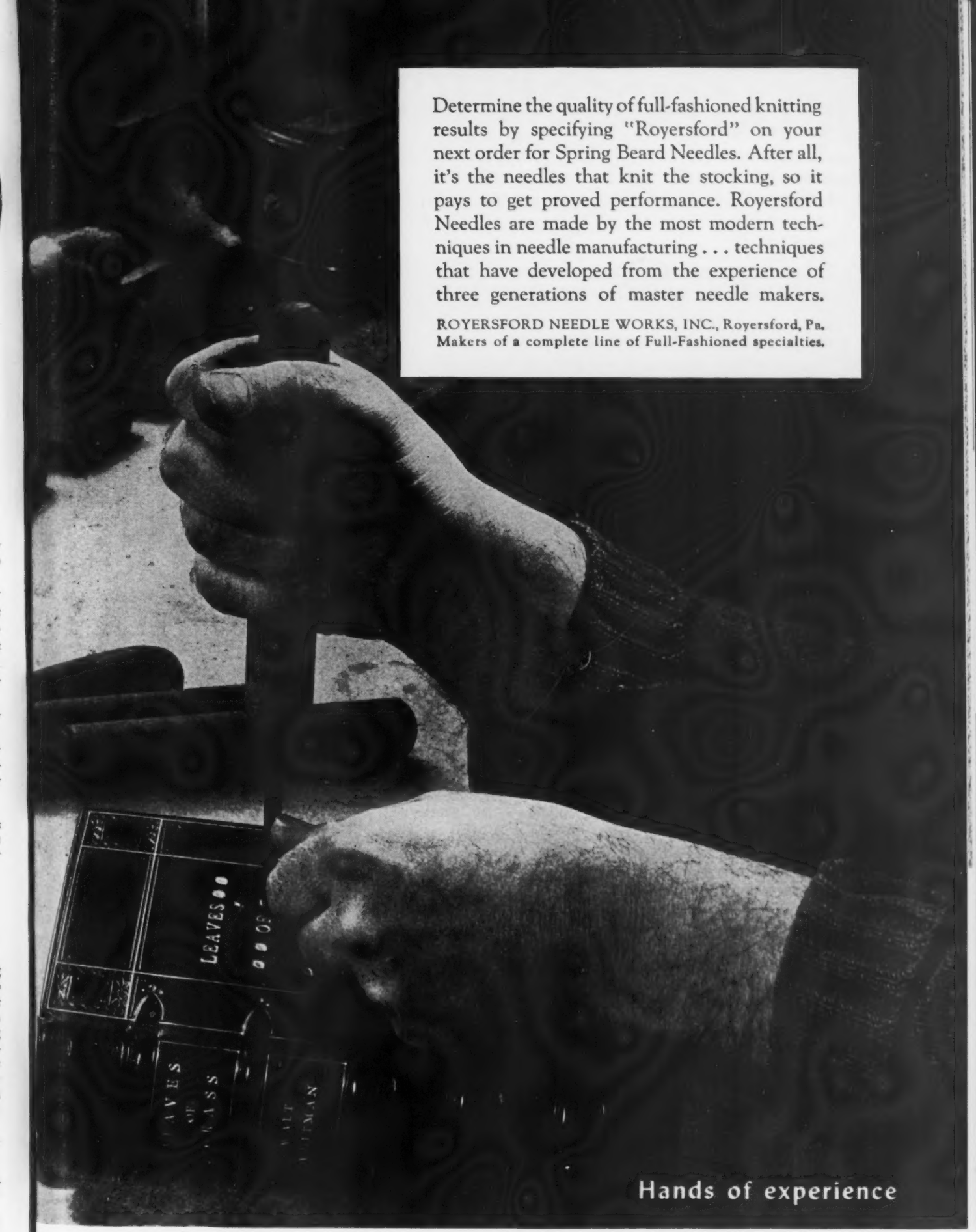
Outerwear Knit Goods Designed on Machine

Technical Editor:

The standard procedure for developing a new knit-goods design is, of course, to work the details of the design out at the designer's desk, draw them on graph paper, have the pressers cut in the knitting room, and apply the pattern to the machine. It has been suggested to us that the reverse of this procedure is used by some mills—that is, that a new pattern is worked out directly on the machine and then recorded.

Do you have any information on designing in this manner? (9232)

At least one large successful outerwear knitting mill uses this "reverse" technique to a considerable extent. Machines and personnel are assigned to the development of designs in this manner. Another mill has on file



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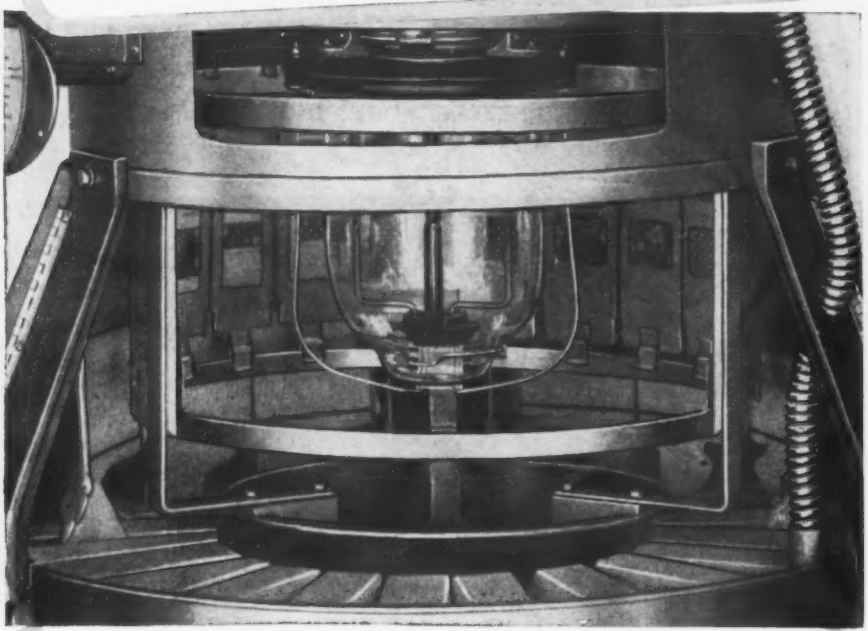

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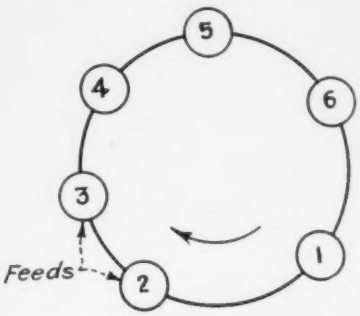
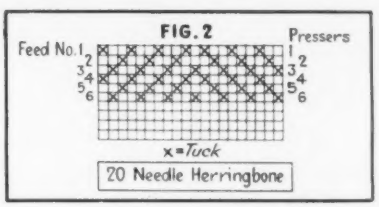
several large sample books containing patterns developed directly on the machine.

One of the advantages of this method of designing is that patterns are often unorthodox and sometimes original. One of the disadvantages is, of course, that many of the patterns developed are useless. To design a fabric directly on the machine usually entails a haphazard setting of the pattern, but accurate control of knitting parts must be maintained at all times.

One routine is to begin with a standard pattern. Suppose, for example, that a 20-needle herringbone pattern is selected as a starting point on a 32-in. cylinder containing 1,000 needles. The gage could be ten needles per inch and the feeds six, of tuck jersey type set around the cylinder in this manner:



Pressers for the 20-needle herringbone pattern would be either 60 or 80-space, as preferred. The standard design would be:



A starting mark is filed on each presser to correspond with the tuck or stitch at the left margin of the graph (cylinder motion clockwise). As in setting up a standard pattern, the starting marks of all pressers are set on the same needle. A few inches of cloth are made to check the pattern and the clearing of the stitches. If any adjustment is necessary, it is made at this point.

The machine is now ready to make a standard 20-needle herringbone. In order to change the pattern, the relationship of the pressers with each other must be changed. This change can be made either by changing their relative position around the cylinder or by setting some of the starting marks on a different needle, as follows:

Starting marks on pressers Nos. 2, 4,

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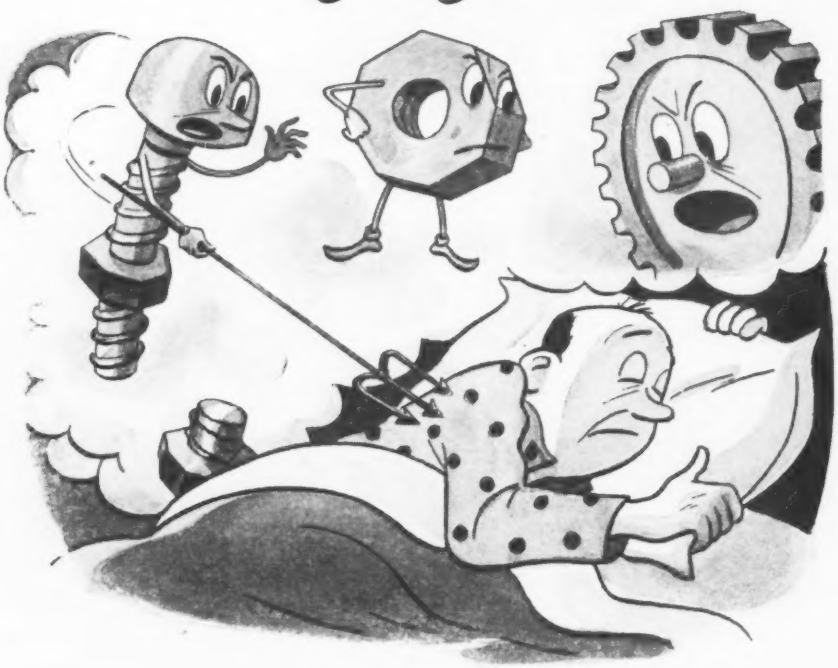

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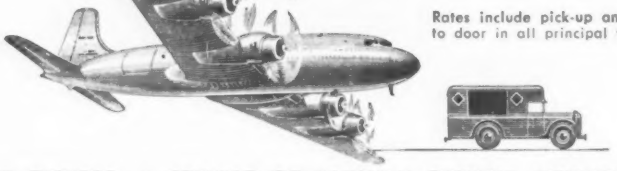

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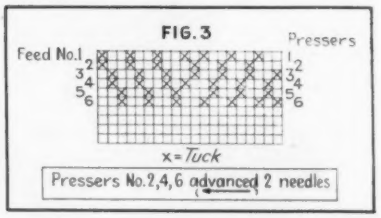
and 6 are advanced two needles. Enough cloth is knitted to allow a good view of the pattern. The design of this pattern would be:



If the design effect seems to have merit, enough cloth is knitted to furnish an effective sample. If the trial pattern does not look desirable, no more fabric is knitted, and the positions of the pressers are again changed.

The positions of the pressers are continued to be changed until desirable patterns are obtained. No record is made of discarded patterns. Those that seem promising are drawn on graph paper. The cuts in the original pressers are known or can be copied directly. Variations from the basic setting can be checked by counting the number of spaces between the original setting and the new position of the presser starting mark. Care should be taken in checking the direction of change—that is, whether the presser was moved forward or backward.

To increase the field of patterns, yarn color changes may be made. If you start with two colors alternating, the position of the colors may be reversed; four ends of one color may be fed with two ends of another; three yarn colors can be tried; etc. Combining presser and color changes makes the possibilities almost unlimited.

Caution must be observed in starting the machine after a presser change. Since the relative positions of stitches and tucks are not predetermined, some combinations will result in an excess of tucks on individual needles. Turning the cylinder by hand until good clearing is obtained will prevent smashes and stitch-ons.

Comparison of Production Requires Similar Fabrics

Technical Editor:

We are interested in learning what technical units weavers in the United States use to compare production per loom or manhour in different periods or mills. With a large range of cloth constructions and frequent changes, comparison in meters or square meters does not make possible any dependable conclusions.

Comparing output in 1,000 picks probably comes nearer to real conditions, but

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this method does not take into account the variations of cloth width. In some mills, the unit of production used for comparison is square meters reduced to 20 picks per centimeter. Even with this unit, the influence of different counts, number of ends, and type of looms is neglected. (9230)

Loom production in the United States is usually figured on a 1,000-pick basis, using the total number of picks possible against the number of picks woven into the fabric in a given number of hours.

These picks are usually counted by an automatic pick counter geared to the loom crankshaft and calibrated to register only once each 1,000 revolutions, or picks.

The type of loom, speed, width, number of harnesses, and filling colors must be considered in the machinery efficiency, as well as the type of fabric woven. There can be no comparison unless fabrics of the same construction are used. Speed of the loom, as the number of picks woven in a given number of hours, will also enter into the picture.

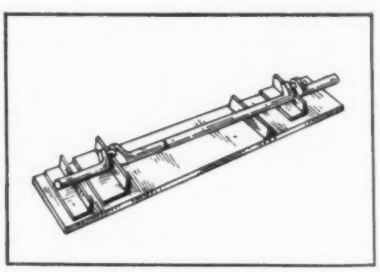
Loom Crankshafts Held in Place for Welding

Technical Editor:

We are interested in devising a set-up for welding loom crankshafts. Can you advise us as to the best way of making a table or holder for this purpose? (9220)

A set-up for welding loom crankshafts was illustrated in the article *Lengthen Crankshaft Life by Cutting and Reversing*, which appeared in TEXTILE WORLD's Kinks and Short-Cuts department in the December, 1946, issue. The sketch is reproduced here.

The important consideration is to hold the Pittman throws in similar positions and to maintain the shaft to be welded in true alignment. Marks or stops added to the base upon which the crankshaft is mounted would be useful in duplicating positions of the throws and shafts.



***Loom crankshafts** can be welded accurately by using a holder similar to this one.*

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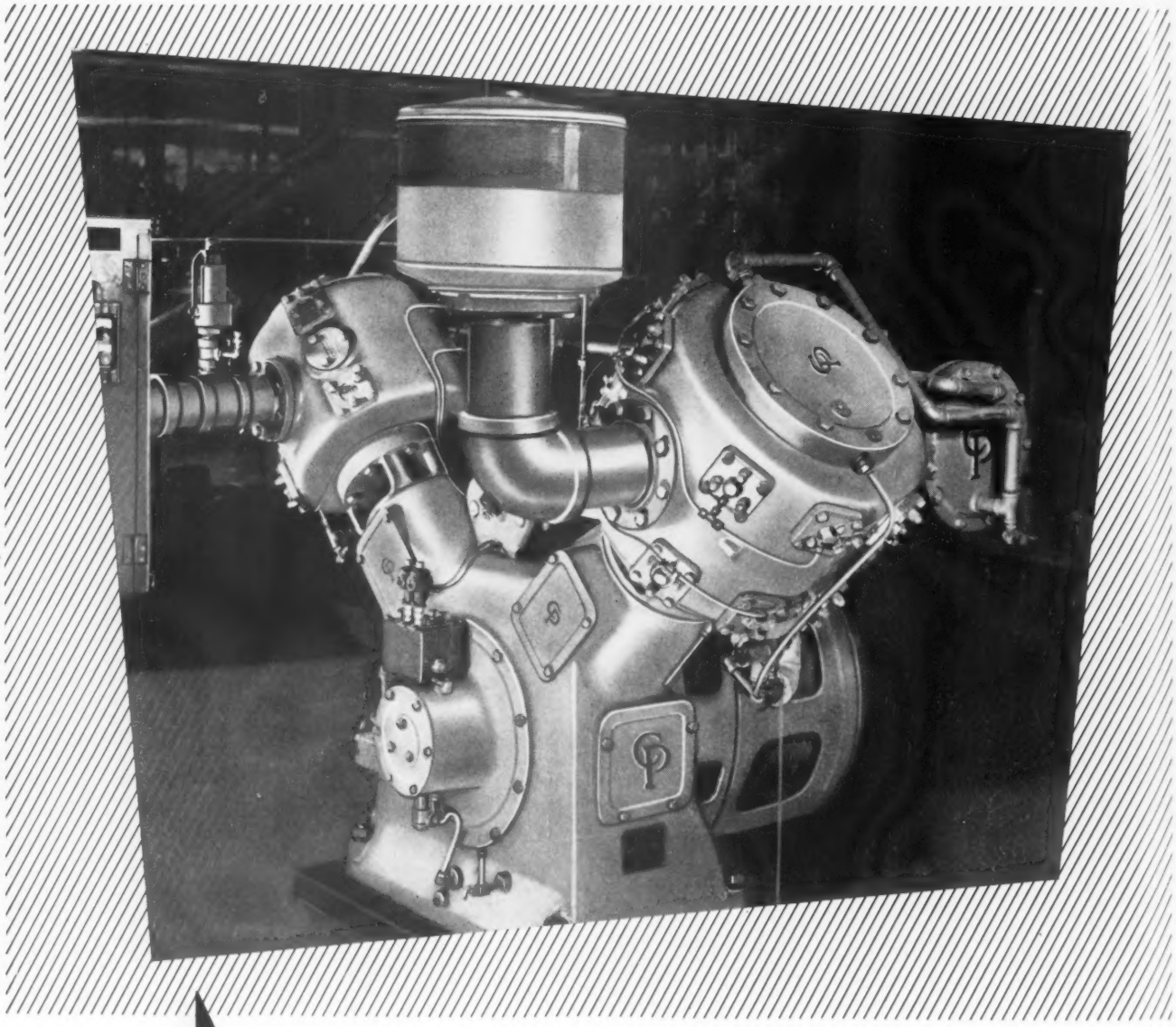

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TEXTILE WORLD'S Guide to Exhibitors

at the

INTERNATIONAL EXPOSITION OF TEXTILE MACHINERY, EQUIPMENT & SUPPLIES

71st Regiment Armory New York, N. Y.
May 3 through 7, 1948

NAMES AND LOCATIONS of exhibits at the first International Exposition of Textile Machinery, Equipment & Supplies, 71st Regiment Armory, 34th St. and Park Ave., New York, N. Y., May 3 to 7, 1948, are given on this and following pages.

Abbeon Supply Co., Woodside, N. Y. Booth 11. Walton industrial and office humidifiers, requiring no compressors, pumps, steam or return lines; featuring air intake through Fiberglas filter. Rep.: Stanley Wertheim, Franklin C. Wertheim, Marvin Preger.

Aetna Felt Co., New York, N. Y. Booths 98, 106. Felts, featuring decating blankets, vibration-control felt, mechanical fabrics and felts, leader foundation cloth, cut felts both woven and pressed. Rep.: Daniel M. Vlaun, J. Kirk, H. C. Outcault, T. D. Shea.

Air-Perme-Ator Mfg. Co., Paterson, N. J. Booth 33. Units for control of temperature and humidity, featuring special machines for conditioning gloves, ribbons, and other textile products before pressing, boarding, etc. Rep.: H. E. Kresse, R. G. Burr, E. Kohut.

American Institute of Bolt, Nut & Rivet Mfrs., Cleveland, O. Booth 95.

American Lava Corp., Chattanooga, Tenn. Booth 6. Ceramic wear-resistant thread guides for textile machinery, and new Alsimag 491 thread guides having qualities comparable to sapphire. Rep.: G. E. Richter, J. B. Shacklett.

American Wool & Cotton Reporter, Boston. Booth 50. Textile publishers.

Arlington Machine Works, Inc., Arlington, Mass. Booth 2. Textile finishing machinery, featuring airflow high-speed scutcher, pneumatic squeeze rolls, and chain-stitch sewing machine, with stress on non-ferrous elements of wet-finishing equipment. Rep.: S. P. Birch, John M. Stearns.

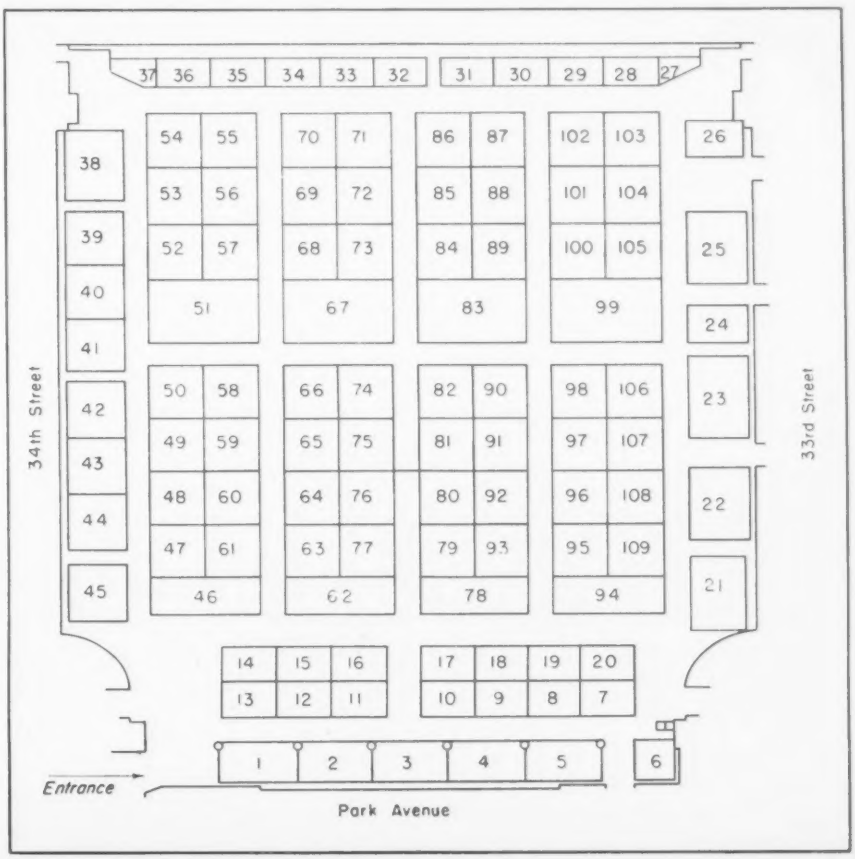
Austenal Laboratories, Inc., New York. Booth 30. Castings, featuring microcastings for industry with close tolerances, soundness, and smooth surfaces. Rep.: J. J. Erdmann, Dr. P. F. Collins, A. W. Merrick, C. P. Brooks, C. Bower, R. L. Wiseman, J. Uhle.

Barco Mfg. Co., Chicago. Booth 12 Barco ball, swivel, and revolving-type joints, featuring low maintenance cost. Rep.: H. S. Kuhn, B. Conybear, R. D. Guy. For the Holden Co.—George Haigh, E. F. Neale.

Bausch & Lomb Optical Co., Rochester, N. Y. Booth 18. Featuring Ortho-Rater, an optical instrument for rapid reliable measurement of employee visual characteristics. Rep.: R. A. Sherman, W. A. Carter.

S. Blickman, Inc., Weehawken, N. J. Booth 47. Stainless-steel textile dyeing and finishing equipment, including fully-inclosed, stainless-steel dyebox; stainless-steel pails, dippers, buckets, cylinders, and rolls. Featuring round-corner construction and polished finish for ease of cleaning and low maintenance cost. A new fully-inclosed dyebox will be shown. Rep.: Bernard Blickman, George Langhirt, Edgar Olsen.

Bruegger Winding Co., Philadelphia. Booth 36. Equipment for handling rayon cakes, including related apparatus. The new Bruegger assembly



The first International Exposition of Textile Machinery, Equipment & Supplies will open at 2 p.m., on Monday, May 3, in the 71st Regiment Armory at 34th St. and Park Ave., New York, N. Y. It will continue daily, 2 p.m. to 10 p.m., closing Friday, May 7. In connection with the exhibit, a forum on textile machinery, accessories, and techniques will be held each afternoon during the exhibit at the Hotel Vanderbilt, which is on the corner of 34th St. and Park Ave., opposite the armory.

will be shown under actual working conditions. Rep.: A. Bruegger.

Buensod-Stacey, Inc., New York. Booth 25 (west half). Adjustable intermittent humidity control, protective coatings, cleaning and spraying equipment for coatings, water treatment for maintenance of air-conditioning equipment. Rep.: A. C. Buensod, R. O. McGary, Owen Merwin, J. C. Rose, W. J. McDonald.

Cadgene Machinery Co. and **L. A. Van Doorne Machinery Co.**, Paterson, N. J. Booth 24. Finishing equipment, featuring a new dye tub, a sample print machine, and a tubing machine; also Sterling Speedtrol motor drive. Rep.: J. Cadgene, L. A. Van Doorne, A. DiCenso, Frank Girardi.

Cidega Machine Mfg. Co., Inc., River Edge, N. J. Booth 41. Cidega knitting loom, combination warp and filling creel, new yarn-guide combs. Rep.: Paul S. Abrams, Sebastian Gangi, Bruno Deri, Robert H. Harbeck.

William Crabb & Co., Newark, N. J. Booth 15. Pins, teeth, lags, combs and hackles, cylinders, pointed wires, and supplies. Featuring steel-faced cylinder lags and hardened stainless steel pins. Heat-treated and Passivated stainless-steel items are new. Rep.: J. C. Bennett, A. P. Sommer, D. D. Button, D. M. Given, E. F. Slaughter, J. T. Slaughter, H. R. Dowdy, Sr., H. R. Dowdy, Jr., J. J. Dowdy, W. E. Himes.

Cutting Room Appliances Corp., New York. Booth 42. Cloth laying equipment, featuring CRA electromatic cloth spreader, electromatic knitgoods laying-up machine, and all-aluminum cutting and work tables. Rep.: David Grossberg, Al Greene, Harold Liebman, Bernard Nathanson, Si Sharman, Herbert Daniels.

Davison Publishing Co., Ridgewood, N. J. Booth 40. Textile publishers.

Durant Mfg. Co., Milwaukee, Wis. Booth 10. Pick and hank counters, lineal measuring machines, stroke and rotary counters for all textile applications featuring new construction of pick- and hank-counter wheel and new shutter mechanism. Rep.: Robert Winkler, Leo A. Nourie, Wm. H. Burr, Wm. Quinn, John Baker.

Edmos Products Corp., Brooklyn, N. Y. Booth 83. Plain-rib, body-knitting machines, featuring precision cams and camming system and a ratio of 1½ feeds per diameter inch, i.e., the 20-in. EEM machine has 30 feeds. Rep.: Larry Reed, Jules Citron, Les Gott, Al Holman, Irving Berman, Milton Moskowitz.

Eriez Mfg. Co., Erie Pa. Booth 62 Non-electric magnetic separating equipment, featuring spiked apron magnet plates and magnetic humps designed particularly for use in textile mills; also Eriez magnetic pulley. Rep.: R. A. Roosevelt, G. R. Wellmon, Carl Harris, Howard Marple, Joseph Kern, Jr.

Fairchild Publications, Inc., New York, N. Y. Booth 13. Textile publishers.

Fuller Brush Co., Hartford, Conn. Booth 66. Brushes covering practically all the cleaning needs of textile mills, including those used on machines for production purposes. Featuring wool dabber brushes; brushes for carding and for thread dressing; fiber brooms. New items include brushes made of Bristrand, a synthetic substitute for hair, fiber, and other brush filling materials. Rep.: L. H. Carl, N. L. Parsons, S. F. Henry, E. W. Mason, Gordon Hall, R. A. Warren.

Gerbing Mfg. Corp., Chicago, Ill. Booth 31. Variable speed pulleys, featuring either horizontal or vertical mounting, use of V-type driven sheave, and constant belt center line provided by expansion of both sheaves. Rep.: J. M. Boit, H. Wilson Moorehouse, Jr.

Hayes Industries, Inc., Jackson, Mich. Booth 64. Loom beams, section beams, and tricot beams of magnesium and aluminum. Rep.: Wm. H. Maxson, Berton C. Brown, Don C. Bender.

Hermas Machine Co., Hawthorne, N. J. Booth 51. Clothroom equipment, including shearing, measuring, and brushing machinery. Rep.: G. P. Mason, W. S. Anderson, R. H. Kelly, R. R. Simpson, James A. Love.

Hinnekens Machine Co., Inc., Paterson, N. J. Booths 78, 79, 93. Finishing machines, featuring patented continuous boil-off machine, examining machine, embossing machine, stainless-steel dye beck, and two-roll padding machine. Rep.: F. J. Hinnekens, M. G. Hinnekens, John S. McNamara.

Human Engineering Foundation, Summit, N. J. Booth 27. Educational posters and literature, featuring improved personnel, reduced accidents, and increased profits; also chemical testing equipment. Rep.: Howard B. Bishop, Miss Elma K. Case, Mrs. Beatrice Puder, Miss Mary C. Kupik.

Hunt Machine Co., Greenville, S. C. Booths 96, 97. Loom equipment including spreaders and drives; also size kettles, hydraulic presses, pumps, etc. Featuring rebuilt looms. Rep.: John O. Hunt, W. E. Henderson, Emil V. Wilson, W. R. Fox, B. M. Cooper.

Hyster Co., Portland, Ore. Booth 67. Fork-type lift trucks, featuring pneumatic-tire trucks especially suited for textile mills. Rep.: Frank McMillan.

Knapp Mills, Inc., and **Lead Lined Iron Pipe Co.**, New York. Booth 125A. Lead-lined pipe, lead and lead-lined valves, lead-covered copper coils, and Lead-Lube, a lubricant. Rep.: John E. English, James H. Ewing, Oscar E. Planteroth, T. E. Dwyer.

Oscar Kohorn & Co., Ltd., New York, N. Y. Booth 51A. Design, erection, and operation of plants for manufacture of filament rayon yarn, rayon staple fiber, and cellophane. Featuring Kohorn survey of rayon shortage in U. S. and possible creation of vertical set-ups by textile mills to assure rayon supply; showing also scale model of a Kohorn rayon plant and data on Kohorn machines. Rep.: Henry Von Kohorn, Ralph Von Kohorn, Joseph Wirth, Milton Gross, Herbert Sobelton, R. A. Morse, Emil Glauber, T. E. Bissell.

Lead Lined Iron Pipe Co., New York. Booth 125 A. See Knapp Mills, Inc.

Lestershire Spool & Mfg. Co., Johnson City, N. Y. Booth 63. Latest design, large-package bobbins; all-aluminum bobbins. Rep.: W. S. Taylor, W. S. Taylor, Jr.

Mechanical Felt & Textiles Co., Weehawken, N. J. Booth 34 (one half). Featuring decating cloth; clearer, slasher, and roller cloth; plushes for spinning; race-plate covering and pressure-roll felt for silk weaving trade. Rep.: Howard R. Dederick, Dean C. Wiggins, Herbert M. Joyce.

Milton Machine Works, Milton, Pa. Booth 19. Warp beams of various types and sizes made of steel or light metal; section beams, tricot beams, ribbon-loom beams, selvage spools. Rep.: J. S. Billig, C. J. Anchor, Jr.

Miskella Infra-Red Co., Cleveland, Ohio. Booth 2A. Infra-red ovens and attachments for textile machines, featuring especially engineered standardized units for processing textiles, and insulated infra-red panels. Rep.: W. J. Miskella, John Hanson, Roy Sloan, G. A. Miskella.

Mount Hope Machinery Co., Taunton, Mass. Booth 9. Guiding and feed-

ing equipment for open-width fabrics; opener equipment for automatic opening of cloth from rope form; free-wheeling expanders; manual or automatic filling straighteners. Rep.: J. D. Robertson, J. B. Hammett, Ralph E. Blackmar, John H. Andresen, H. H. Hartley, E. F. Slaughter, J. Fred Slaughter, E. A. Auerbach, A. M. Romero, P. A. Collins.

National Drying Machinery Co., Philadelphia. Booth 65. Drying machinery for textiles, featuring new swatch dryer. Rep.: H. O. Kaufmann, D. A. Colker.

John P. Nissen Jr. Co., Glenside, Pa. Booth 34. Writing tubes and inks for marking textiles, featuring resistance to all dyeing, bleaching, and other finishing operations. Rep.: Chandler Ford, Milton A. High, 3rd.

P. O. M. Co., New York. Booth 17. See Werner Textile Consultants, Inc.

Penn Reed & Harness Co., Allentown, Pa. Booth 46. Metal reeds of all types and widths, reed-brushing machine, fiber-clad shuttles, warp rods, binder pins, etc. Rep.: J. I. Forrest, E. R. Seibert, R. R. Foulke.

Perfecting Service Co., Chicago, Ill. Booth 26. All-purpose, ball-bearing rotary unions for textile applications. Rep.: Van L. Shaw.

B. F. Perkins & Son, Holyoke, Mass. Booth 22. Textile finishing machinery, showing model calender, embossing machine and bin piler; also wool fiber conditioner, blender, and Mullen tester. Rep: John L. Perkins, 3rd., Thomas E. Kane, R. E. Getchell, J. H. Stewart.

Rayon Textile Monthly, New York, N. Y. Booth 80. Textile publishers.

Robert Reiner, Inc., Weehawken, N. J. Booth 45. A pictorial exhibit of Reiner creels, warpers, tricot machines, simplex machines, Kaylooms, hosiery Twin-Knitters and Auto-Heelers; also motion picture by means of Sonovision projector. Transportation service for prospective customers to Reiner plants. Rep.: Dr. Robert Reiner, Fritz Lambach, August Schoenenberg, Karl T. Marx, George Moebius.

Sarco Co., Inc., New York. Booth 32. Sarco steam trips, strainers, temperature regulators, mixing valves for steam and water and for hot and cold water, steam and hot-water-heating specialties; featuring special steam-control system for dye vats. Rep.: E. J. Ritchie, Albert Milnes, R. W. Cumming.

Shell Oil Co., Inc., New York, N. Y. Booth 82. Shell textile lubricants.

Sjostrom Machine Co., Lawrence, Mass. Booth 8. Textile machinery, featuring Fold-Fast folder and stacker for napkins, blankets, towels, bedspreads, etc., with electronic controls. Rep.: R. L. Sjostrom, R. E. Dallon, W. G. Hall, W. E. Shea.

TEXTILE WORLD will maintain headquarters in Booth 21 at the International Exposition of Textile Machinery, Equipment & Supplies. A cordial invitation is extended to visitors to make this booth business headquarters while in New York. TEXTILE WORLD will be represented during the show by Edwin D. Fowle, publisher; C. W. Bendigo, editor-in-chief; William Buxman, manager; and by William B. Dall, William A. Newell, Prentice M. Thomas, C. Mallard Bowden, A. W. Fisher, R. L. Chisholm, H. C. Harvey, J. G. Sabella, M. C. MacKenzie, Ralph C. Maultsby, William G. Ashmore, Earle Mauldin, C. Norris Rabold, Francois E. Cleyn, Gustav Zellnik, John Dalton, Eugene Schremp, C. P. Wood, H. B. LeFeaux.

South Bend Lathe Works, South Bend, Ind. Booth 81. Lathes and accessories, featuring 9-in., 10-in., and 16-in. lathes in operation. First showing of 14-in. drill press and 7-in. metal shaper. Rep.: C. L. Miller, R. W. Planck, P. E. George.

Southern Textile News, Charlotte, N. C. Booth 37. Textile publishers.

Morris Speizman Co., Inc., Charlotte, N. C. Booth 7, 20. Textile machinery, featuring hosiery machinery and miniature 4x4-box silk loom. Rep.: Morris Speizman, Ted Valenstein, M. P. DeLeo, C. E. A. Keene, John Jenkins.

Standard Pressed Steel Co., Jenkintown, Pa. Booth 75. Showing Unbrako socket-screw products, Flexloc self-locking nuts, Hallowell steel shop equipment, and such new specialties as spindles and fully formed Unbrako pressure plugs. Rep.: J. W. Friel, G. Somes, Jr., J. Harkins, C. Hollingsworth, J. Martin, J. Wiest, W. A. Tait, B. Jones, F. Kull.

Supreme Knitting Machine Co., Inc., Brooklyn, N. Y. Booth 74. High speed, multiple-feed, circular knitting machines for jersey and fancy fabrics. Featuring Model SA automatic variable striper, 24 in. in diameter with 32 feeds, producing stripes and plaids; also Model MJ, which the makers say produces bodies for polo shirts or underwear at rate of 100 yards per hour. Transportation will be provided to company's plant. Rep.: B. R. Ebersman, Lester Mishcon.

G. H. Tennant Co., Minneapolis, Minn. Booth 16. Floor machines, equipment, and supplies for reconditioning and maintenance of textile-mill floors. Featuring mechanized maintenance to reduce man-hours for floor care, including methods for reconditioning, hardening and sealing, and dry cleaning floors to provide optimum condition. Latest additions include new-type floor edger, oil cover paint, Safe-Walk paint, and new penetrating and surface seals. Rep.: Orville C. Hognander, Geo. D. Billings, W. H. Emerson, Pat Manfra, Walter Boyer, Hill Trube, Al Jackson, Robert Guthrie.

Textile Industries, Atlanta, Ga. Booth 4. Textile publishers.

Textile World, New York, N. Y. Booth 21. Textile publishers.

L. A. Van Doorne Machinery Co., Paterson, N. J. Booth 24. See Cadgene Machinery Co.

Van Vlaanderen Machine Co., Paterson, N. J. Booths 58, 59, 60, 61. Dyeing and finishing machinery, featuring dye jigs, dye becks, decating machines, tubing machines, and tenter clip. Rep.: C. H. Van Vlaanderen, George Van Vlaanderen.

Veeder-Root, Inc., Hartford, Conn. Booth 1. Pick, hank, revolution counters; hand-operated, electrically operated, and mechanically operated counters; cut-meters, linear-measuring counters, and complete line of ratchet, direct-drive, and revolution general-purpose counters for textile industry. Rep.: A. E. Kallinich, G. L. Logan, R. W. Bailey, E. C. Britton, T. L. Ellis, W. T. Heydt, T. Nelson, Jr., C. S. Palmer, R. G. Perfect, L. W. Seofield, W. R. Soderquist, W. S. Travis, F. J. Swords, R. C. Conant.

John Verduin Machine Corp., Paterson, N. J. Booths 99, 100, 105. Processing equipment including calenders, washers, agers, pad dyeing machines, dye becks, dye jigs, etc. Rep.: John Verduin, G. W. Barrowelough, G. A. Christie, Nicholas Verduin, M. J. Gillen, Carl Shattuck, William Campbell, Harold Pomroy, Bruce Stewart, Waldemar F. Larsen.

Walton Laboratories, Irvington, N. J. Booth 94. Humidifiers, featuring mechanical humidifiers discharging a cold steam vapor and new filter-protected industrial humidifier. Rep.: William Feldermann, John B. Feldermann, R. J. Lewis, Ben Dickinson.

Werner Textile Consultants, Inc., and **P. O. M. Co.**, New York. Booth 17. Visual interpretation of the specialized technical services rendered to spinning and weaving mills covering mechanical conditions, processing methods, manufacturing controls, and materials-handling installations. Rep.: Herbert L. Werner, Rudolph M. Ashner, Walter A. Ross, Jack C. Werner.

ANNOUNCING

THE BUENSOD - STACEY

ADJUSTABLE INTERMITTENT

HUMIDITY CONTROLLER

16 ga. steel cabinet

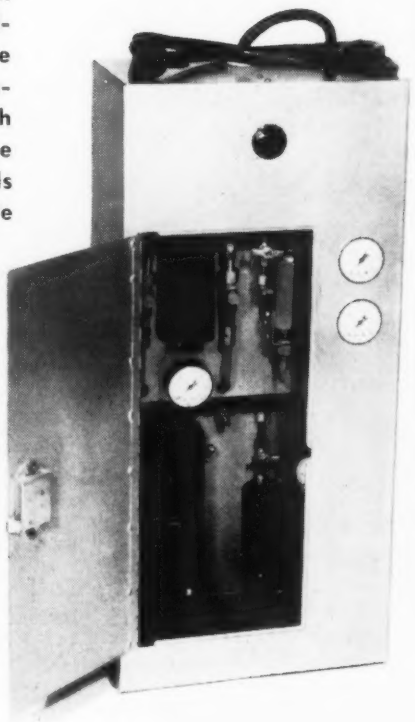
27" long x 13" wide x 7" deep

Arranged for wall or column mounting

Continuous room air sample drawn through filtered opening in bottom of cabinet, over control elements and discharged by fan in top of cabinet

Cabinet fitted with lock to prevent tampering

Insures extremely close control of relative humidity without the objectionable atomizer-head "wet-down" that is sometimes encountered. This "wet-down" is eliminated by the adjustable and intermittent features of the CONTROLLER which regulate the cycle of atomizer-head operation without interfering with their use in obtaining the desired relative humidity conditions. The adjustment extends through a wide range and is therefore suitable for a variety of applications.



Interior view showing arrangement of control instruments which will include humidity control or a combination with thermostat or second humidity control for week-end operation.

AIR CONDITIONING

Humidifying Systems
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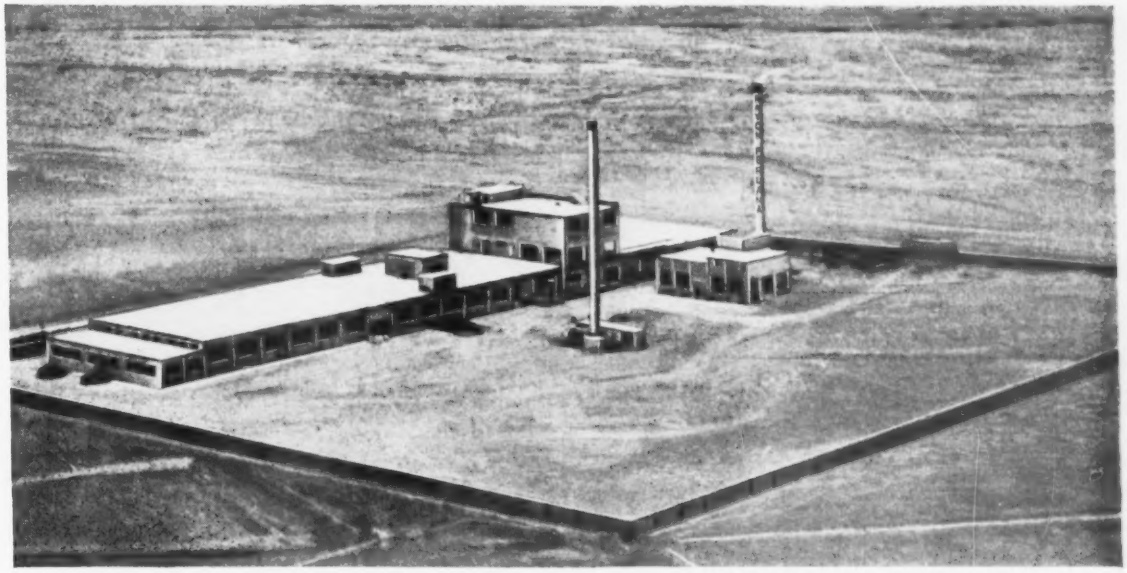
From this new South American plant

Number 11 of a series of Kohorn projects

RAYON USERS ARE RECEIVING . . .



. . . MORE FILAMENT RAYON YARN . . .

Weavers, knitters and spinners organized this new rayon-producing plant to secure for themselves, through a vertical supply structure, a dependable source of rayon. The plant's present equipment has a weekly capacity of 30,000 lbs. of filament rayon yarn. A rayon staple fiber department of 75,000 lbs. weekly output is now being added. The contractor for the engineering, equipment and technical management of the plant is Oscar Kohorn & Co., Ltd.

United States converters, weavers, knitters and spinners who similarly wish to obtain more filament rayon and rayon staple fiber are urged to consult us now in confidence.

Pioneers of the Rayon Industry

OSCAR KOHORN & CO., LTD.

EXECUTIVE OFFICES **501 FIFTH AVENUE, NEW YORK 17, N.Y.**

Visit Kohorn at Booth 51A of the International Textile Machinery Show, New York, May 3-7

You are invited to Booth No. 15

WIN A RADIO

A radio will be awarded free to the individual, employed in the Textile Industry, who most accurately identifies the collection of items on display in our booth. Some are new, some are old. Results will be judged and scored on accuracy of identification of all items in the collection. All members of this firm and this publication, their families and relatives are excluded from this contest.

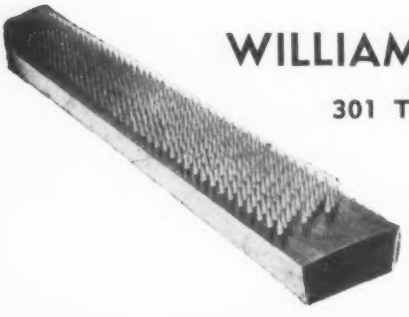
Write or call us for free visitor's passes and receive identification for competing in our radio contest.

COME and SEE

. . . . an interesting display of the complete line of Crabb Pins, Lags and Cylinders.

YOU will LEARN

. . . . about our Technical Service offered to help you solve any difficulties you may have encountered in operation due to pins and lags . . . . and, how Crabb Pins and Lags solve even the hardest problems.



WILLIAM CRABB AND COMPANY

301 THIRD AVENUE • NEWARK, N. J.

MEET US IN NEW YORK

AT THE INTERNATIONAL EXPOSITION OF TEXTILE MACHINERY

It will be held at the 71st Regiment Armory, 34th Street and Park Avenue, New York, May 3rd to 7th.
If you are interested in processing and finishing equipment for broad goods you will want to talk to our engineers. Several Van Vlaanderen machines will be on display.

VAN VLAANDEREN MACHINE COMPANY

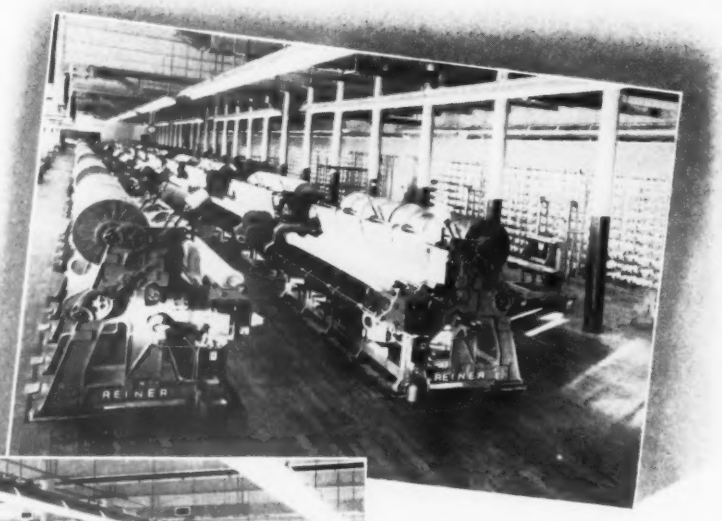
370 Straight Street, Paterson, 3, New Jersey Cable Address, VLAANDEREN, PATERSONNJ, U. S. A.

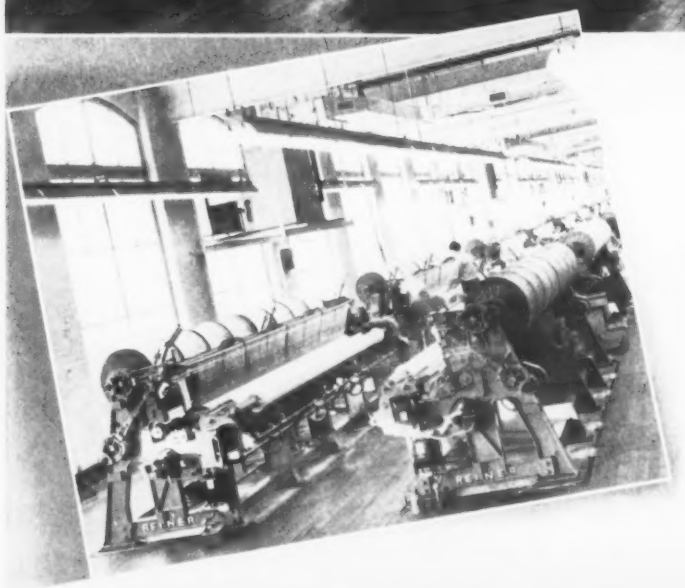
World's largest manufacturer of machinery for processing modern fabrics

"THEY RUN LIKE CLOCK WORK"

—you hear comments like this among production-wise users of Reiner High Speed Tricot Machines and other Reiner equipment.

There is a reason of course. Since 1945, we have installed over 300 units of this steady and profitable producer. New and repeat orders give vivid evidence of its mounting popularity among knitters who know good machines when they see and use them.





Photos courtesy
New Bedford Knitting Co.

The new Reiner High Speed Tricot Machine has a cruising speed in excess of 450 courses per minute, with a knitting width of 168 inches (or 84 inches with still higher speeds). It takes spools up to 21" warp flange diameter or of conventional size. It can be operated with either pattern wheel or a chain link drive. The change-over is a matter of minutes. This gives the knitter a selective pattern range of one bar or two bar tricot fabrics of rayon, nylon, silk, cotton, wool, etc., single-fibre or blended yarns. We also manufacture 3-bar machines. Gauges from 14 to 32.

The Reiner Line also includes:

a full line of preparatory equipment such as creels and warpers for all requirements, warping spools, hydraulic beam lift wagons, stop motion equipment, and auxiliary items, giving the knitter a continuous line from start to finish, all available from one source.

Ask for our richly illustrated catalogs, or, better still, write to us for an appointment to see this High Speed Tricot Machine in action at our showrooms in Weehawken, New Jersey.

ROBERT REINER INC.

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...thousands in use...and a machine for every use

Materials handling costs too high? Crowded for room? Space at a premium? You can use a Hyster fork type lift truck or Karry Krane with profit to hoist, move, tier heavy, bulky goods of all kinds. Your choice of 7 models with capacities ranging from the small 2,000 lb. fork truck to the 30,000 lb. straddle truck. All on pneumatic tires. All gasoline-powered. All manufactured to the highest engineering and performance standards. All sold and serviced by Hyster distributors — specialists in materials handling equipment. Do as every type of industry has done all over the world. *Save time, labor, money with a Hyster.* See your distributor. Write for literature.

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HONOLULU, T. H.—Electric Steel Foundry Co.
HOUSTON, TEX.—C. H. Collier Co.
INDIANAPOLIS, IND.—Central Rubber & Supply Co.
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LOS ANGELES, CALIF.—Hyster Company
LOUISVILLE, KY.—Embry Brothers, Inc.
MEMPHIS, TENN.—Hyster Co. of Louisiana, Inc.
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In addition to above, Hyster Export Dealers are located in 30 foreign countries.

Hyster "20" *(below)* licks the storage handicaps of narrow aisles in warehouses, factories. Ideal for use in box cars, any close quarters. Only 37" wide. Hydraulic lift hoists 2,000 lbs. 9 feet. Other heights of lift and special fork truck tools available.

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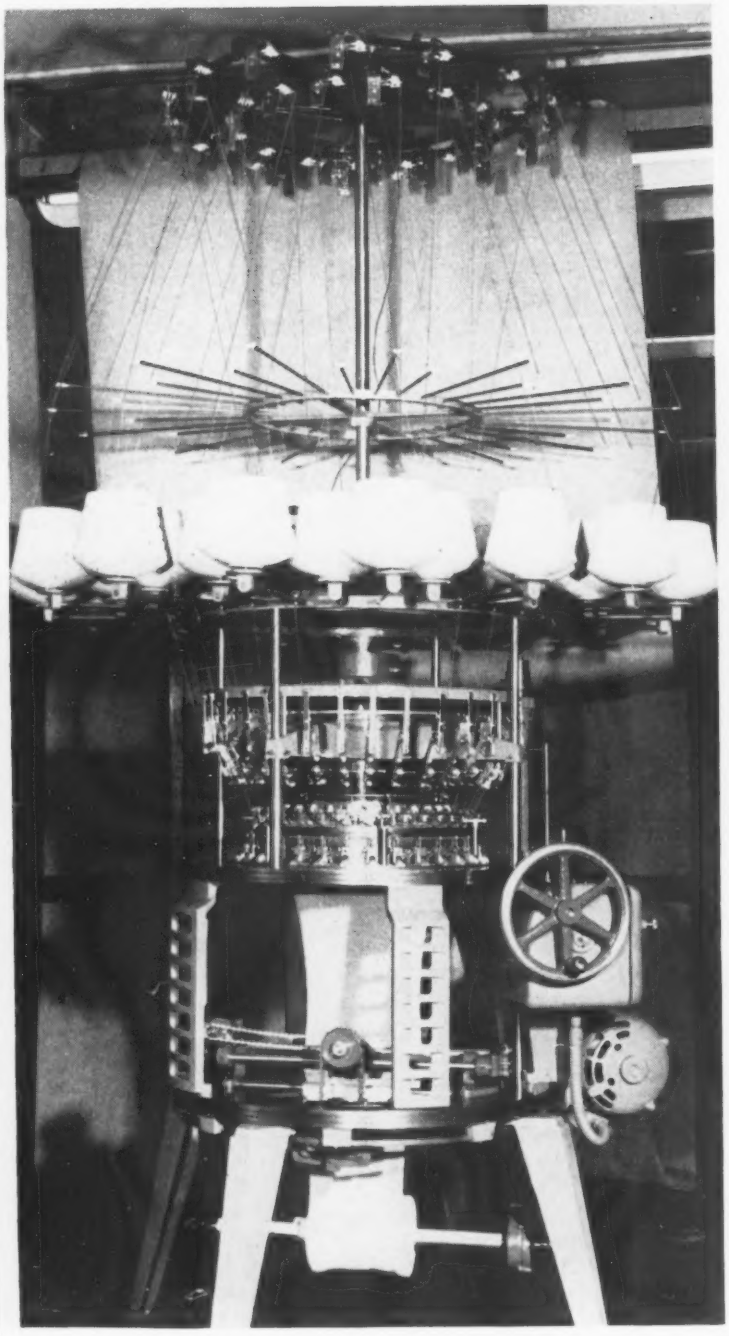
Mr. Underwear Manufacturer:

See it in Action—The World Premiere of This . . .

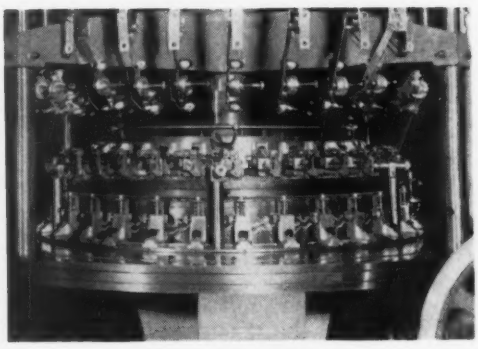
New, Astonishing 20″ DIAMETER 30 FEED

EDMOS Type EEM Super Multi Feed Plain Rib Body Machine



Booth 83
Edmos Exhibit
International Exposition
May 3-7, '48

If you cannot attend see a demonstration at the Edmos plant.



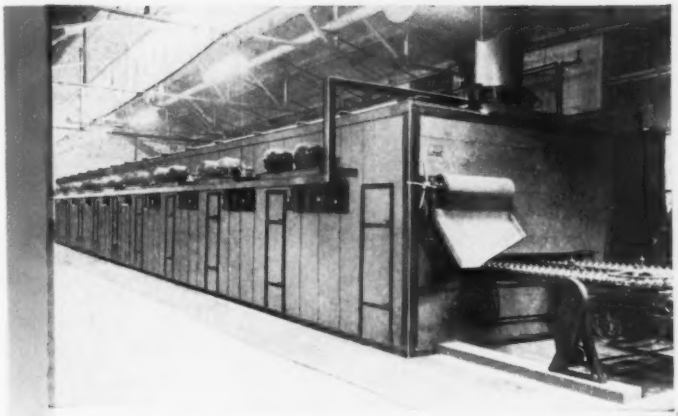
Seeing's believing. We want you to witness a performance of this amazing 20" diameter 30 feed mechanism that may quadruple your production without increased space. Edmos engineering offers these unique features:

- 1½ feeds per diameter inch
- Simplified camming system both on cylinder and dial
- Gear driven dial
- Over-sized dial shaft
- Adjustable motor mount
- Simplicity
- Accessibility
- Interchangeability

EDMOS PRODUCTS CORP., 13 Christopher Ave., Bklyn 12, N. Y.

LOOK IN ON "NATIONAL" AT THE SHOW!

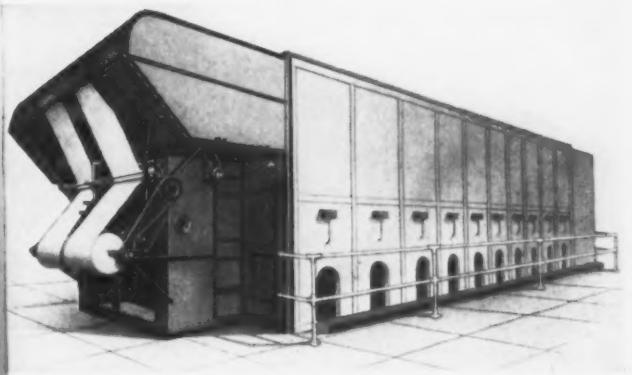
For First-Hand Facts About These High-Speed Dryers



MODEL SR-4 TENTER DRYER

The machine that gives up to *twenty-times* greater production than is possible with other types of Tenter Dryers. Adjustable volume fans; improved application of the drying medium; automatic end closures; and continuous fine-mesh filter screen, are among the features which contribute to

Greater Drying Capacity Per Lineal Foot of Frame



MODEL E AUTOMATIC PIECE GOODS DRYER . . .

Unequalled for fast, low-cost drying and curing. High-velocity, adjustable-pitch fans; double-action conveyor poles; and controlled air diffusion are some of the features that assure

Uniform Drying and Curing at Greatly Increased Speeds

See This New SWATCH DRYER

A small, compact machine that provides a practical and economical method of pre-determining the ultimate effect of drying and curing on the color, by duplicating actual conditions in full-size dryer.

"NATIONAL" EQUIPMENT MEANS *Quality* DRYING AT *Lower Costs*

Design and construction of every "NATIONAL" machine assure the highest possible efficiency in converting *air horsepower* into *productive capacity*. Result . . . faster, more uniform drying, with important savings in operating costs.

YARN, SKEIN AND STOCK DRYERS — NATIONAL — PRINT GOODS DRYERS

LOOK IN ON "NATIONAL" at Booth No. 65, International Exposition of Textile Machinery, Equipment & Supplies, New York City, May 3 to 7.

THE NATIONAL DRYING MACHINERY CO.

LEHIGH AVE. AND HANCOCK ST., PHILADELPHIA 33, PA.

Around the Calendar
There's always a job for Cidega Knitting Looms

Variety of Yarns

Nylon
Silk
Cotton
Wool
Chenille
Gimp
Cellophane
Horse Hair
Artificial Straw
Twisted Cords
Crochet Silk Cord
Soutache Braid

Variety of Products

Curtains
Bedspreads
Carriage Covers
Tablecloths
Novelty Scarfs
Upholstery Trimmings
Bath Mats
Hammocks
Millinery Trimmings
Drapes & Drapery Trimmings
Curtain Trimmings
Lamp Shade Trimmings
Wash Cloths, etc.
Ladies Lingerie Trimmings
Laundry Bags

Features:

Ball and thrust bearings. Larger Cams for higher speeds. Balancing flywheels. Multiplier or automatic pattern repeating mechanism. Take up roller geared so number of teeth on ratchets corresponds to number of stitches per inch. ½ to ¾ h.p. motor (depending on size of loom) or overhead transmission. Heavy construction throughout. Combination warp and filling Creels (optional) with slack attachment for drawing off yarn simultaneously and evenly.

See us at the show
BOOTH No. 41

From season to season you can switch to products with seasonable markets, thus keeping your Cidega Looms busy the year round producing high quality, low cost merchandise that sells readily in a premium market.

You can make a great variety of fabrics with Cidega knitting looms. Fabrics from 1/10" in width (across the machine) up to the full width of the machine with any yarn in a wide variety of colors and designs.

Cidega Looms are built in three sizes: 40", 54", and 76". They attain remarkable production, are simple to operate and easy to handle. Automatic stops insure against damage of product. A single operator can handle from 4 to 6 Cidegas. Tell us your conditions. We can help you.

Cidega Machine Manufacturing Co., Inc.

270 JOHNSON AVENUE RIVER EDGE, NEW JERSEY

HAckensack 3-4473 • Cable Address "Cidegainc"

Amazing Light Weight—Low Cost

HAYES
now offers...
REVOLUTIONARY NEW ALUMINUM SECTION BEAMS
at $100.00

Delivery in 90 days

Size— 28" diameter head— 54¼" traverse—10" diameter barrel—1¼" diameter high strength steel shafts.

Weight—Approximately 115 lbs.

Accurately machined tor better balance and high speed uniform warp.

Barrel and heads, smooth machine finish, cannot splinter or shrink.

High strength heads hold spreading to minimum.

Substantial savings in shipping and handling costs are due to the exceptional light weight of aluminum.

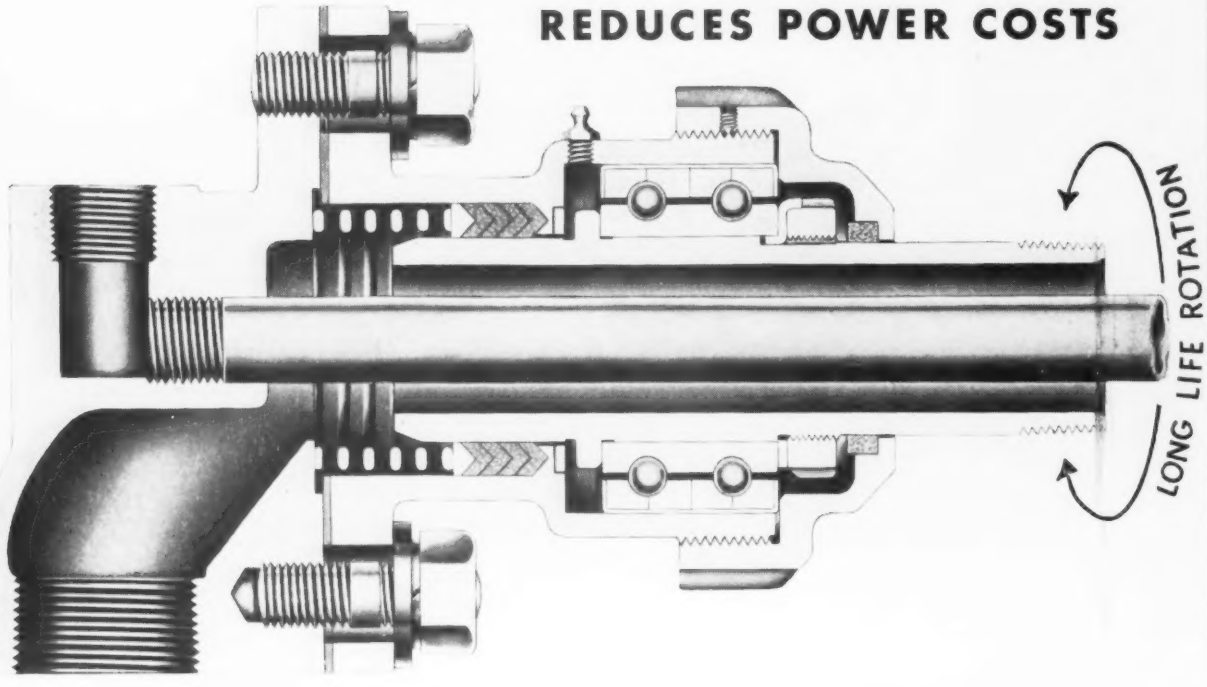
Tested and approved for rayon by one of the largest rayon manufacturers.

Priced as low as $100.00 in quantities. F. O. B. Jackson, Mich.

WRITE OR WIRE FOR FULL INFORMATION

HAYES INDUSTRIES, INC. Home Office: JACKSON, MICHIGAN, U. S. A.

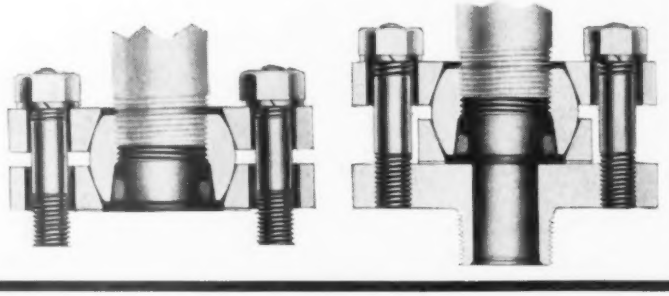
MINIMIZES STEAM LEAKS
REDUCES POWER COSTS



The BARCO Revolving Joint

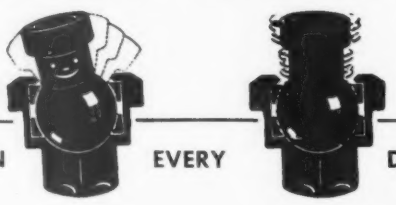
Designed especially for the textile industry, the Barco Revolving Joint is used on all types of rotating applications, including slashers, calenders, sanforizers, and dry cans. Barco minimizes steam leaks and its lower turning torque reduces power costs. Textile weaving and finishing plants or bleacheries have found Barco unusually successful in cutting maintenance worries. For more particulars about this and other Barco Flexible Joints for the textile industry, write Barco Manufacturing Company, Not Inc., 1834 Winnemac Avenue, Chicago 40, Illinois.

BARCO BALL FLANGE— Cross-section view of Barco Ball Flange for use on threaded and flanged rolls and for correcting roll misalignment. Sleeve can rotate concentric even though threads on roll are tapped off center.



BARCO FLEXIBLE JOINTS

Not just a swivel joint ...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.



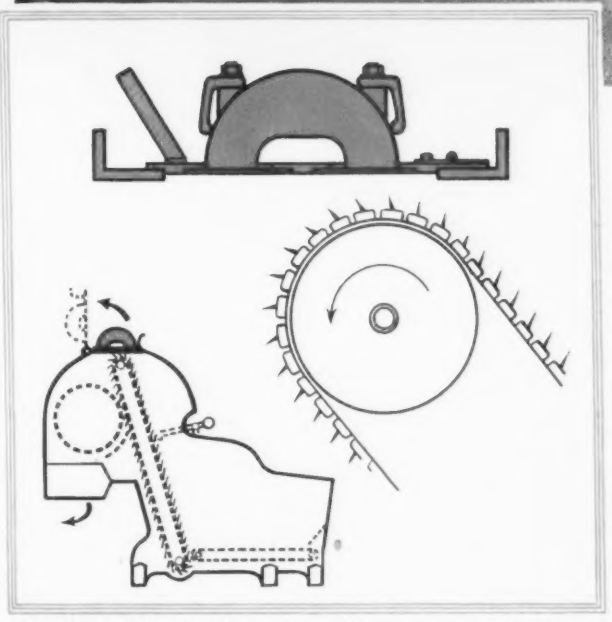
"MOVE IN EVERY DIRECTION"

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

In Canada: The Holden Co., Ltd., Montreal, Canada.

Eriez Magnets give more efficient and simplified MAGNETIC PROTECTION

1. Supporting angle iron.
2. Magnetic Separator in working position.
3. Magnetic Separator swung up for cleaning.
4. Handle for swinging back hinged Magnetic Separator.



The Eriez Magnetic Separator, shown above, is built for suspension over spiked apron feeders. This application assures superior cleaning results because the magnet is operating at a point where materials are opened and traveling at low speeds. Eriez Magnetic separation is simple. As material is conveyed to the top of the apron, it passes into the magnetic field where tramp iron is removed. Eriez magnets can be built any size required in order to fit existing or new machinery.

See our Exhibit International Exposition of Textile Machinery and Supplies, Booth No. 62. NYC, May 3-7.

POSITIVE protection from fires and machinery damage caused by tramp iron is provided when Eriez non-electric permanent magnetic separators are installed in textile processing lines. The Eriez magnet is simple, requires no maintenance other than cleaning of collected trash. It is easily understood, maintained and installed by ordinary labor. There is no operating cost . . . The Eriez is light in weight, extremely flexible in design and economical in cost. It presents no additional fire hazard of its own to the process protected. The magnetic strength of Eriez Magnets does not diminish. It is permanent—the power is always there. No chance of electrical failure or human forgetfulness. Eriez Non-Electric Permanent Magnets are effective in removing Tramp Iron from all types of fibers. Submit your tramp iron removal problems to us, we will be glad to help in their solution.

Please send bulletin No. 104A and the following: TW-4

Data on Eriez Magnets for:

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name .....

Address ..... City ..... State .....

● *When It's Magnetic Protection . . . See Eriez First*

ERIEZ MANUFACTURING COMPANY

501 East 12th St., Erie, Pa.

B. F. PERKINS & SON, Inc.

HOLYOKE, MASS., U.S.A.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

MANUFACTURERS' BULLETINS

A REVIEW of the month's outstanding trade literature. Items are listed one month only—no repeats.

Free FOR THE ASKING

1. The Simplex machine made by Robert Reiner, Inc., the fabrics it can produce, and its construction features are all shown and described in a recent booklet.

2. The Leveltronic relay, an electronic-control unit designed for basic applications in the control of liquid level, interface pressure, and temperature is described in a catalog and price sheet available from R-S Products Corp.

3. Dustkop dust collectors in typical installations are illustrated and described in a bulletin #510 entitled "Put a Permanent Stop to Dusts" issued by Aget-Detroit Co. Collectors for dusts and lint from grinding, polishing, and buffing operations as well as vapor collectors to trap the mist and vapor from thread grinders and centerless grinders are included.

4. Cotton slashers and equipment made by West Point Foundry & Machine Co. are shown and described in a recent booklet. Two- and three-cylinder machines, three types of creels, single- and double-beam head ends, and other equipment are included.

5. A stock gear and reducer catalog has been issued by Ohio Gear Co. Sections on reducers, gears, chains, and sprockets and 120 pages of engineering data are included.

6. Permanent standard buildings fabricated from heavy rolled-steel sections, available in two design loads are shown and described in a booklet offered by Luria Engineering Corp.

7. Spinning calculations simplified and, in some cases, reduced to graph form are contained in a chapter of Vol. V, No. 12 of *Platt's Bulletin.*

8. "Taxes and Profit-Sharing Plans" is the title of a 16-page booklet available from Charles D. Spencer & Associates, Inc. It explains the U. S. Treasury-approved profit-sharing plans under which both employers and employees are accorded favorable income-tax treatment.

9. The application of fabricated plastics to industrial processes in the form of chutes, guards, housings, pulleys, etc. is described in a booklet available from Fabri-Form Co., fabricated-plastic engineers.

10. The new lockstitch machine of Union Special Machine Co., model 52800, with improved lubricating system is described in a recent issue of *The Needle's Eye.*

11. A free washroom-maintenance service to users of West Disinfecting Co. sanitation products is discussed in a booklet issued by the company.

12. Boiler feed pumps, their construction, selection, application, and performance are shown and described in a folder issued by Jacuzzi Bros., Inc.

13. The ball-bearing doffer-comb box with sealed bearings, which is made by Southern States Equipment Corp., is described in a recent folder.

14. Ballasts for fluorescent lamps, their construction, and application are described in a General Electric catalog covering all types.

15. "Selection and Use of Fatty Acids" is the title of a new Armour & Co. booklet. Many textile applications of the fatty acids are described.

16. A woolen ring-spinning frame made by Platt Bros. (Sales) Ltd. is described in a recent booklet. Construction features are fully described and illustrated.

17. Sixteen lines of attack on break-even points through reducing costs and increasing production are outlined in a brochure available from Remington Rand Inc.

18. Vision on the job—and what it means to yarn operations are discussed in a recent issue of *Bausch & Lomb Magazine.*

19. Materials-handling machines and special-handling attachments which make up the complete line of the Tructractor Div. of Clark Equipment Co. are shown and described in a new 40-page catalog.

20. Winding, cutting, folding, spooling, hot pressing, and fast-edging machines of Consolidated Sewing Machine & Supply Co., Inc., are shown and described in a folder of catalog sheets.

21. Temperature and pressure instruments for measurement and control, making up the complete line of Gotham Instrument Co., Inc., are described and shown in a new catalog. Structural features and application data are included.

MILL EXECUTIVES may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.

Instructions for use of post cards on either side

Write in box the number of item describing one catalog wanted. ☐

Coupon void if not filled out completely

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Good until August, 1948

TEXTILE WORLD, New York City (April, 1948)

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Post Card

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TEXTILE WORLD

330 WEST 42nd STREET

NEW YORK 18, N. Y.

McGraw-Hill Publishing Co., Inc.

22. Standard test methods for determining various properties of pyroxylin and thermoplastic vinyl-resin-coated fabrics are described in a booklet offered by Pyroxylin & Resin Coaters Institute.

23. Tables showing the properties of the most commonly used types of stainless steel, displayed for easy reference, are featured in a new bulletin describing John B. Astell Co. stainless-steel pipe, tubing, and fittings.

24. Savings in maintenance of machine elements by use of metallizing are described and shown pictorially in a recent issue of *Meteo News*, publication of Metallizing Engineering Co. Use of Sprabond, a new bonding metal which reduces metallizing from eight to three steps, is also discussed.

25. Bramwell feeders for any textile-blending requirement are shown and discussed in a folder available from Geo. S. Harwood & Son. Aprons, garnett feeds, and continuous feeds are also covered.

26. Electric-hygrometer equipment, which comprises the complete line of American Instrument Co. for exacting industrial and laboratory applications, is comprehensively described in a recent 28-page bulletin.

27. New life for worn roofs is discussed in maintenance guide published by the Stonhard Co. It explains that extra years of life for any type of roof can be obtained by careful inspection and timely treatment. Danger signs that lead to roof failure are described, and cut-away illustrations show the vulnerable points where special attention is most often required.

28. Use of Axiflo fans in high-temperature applications, stressing economy and versatility of performance, is described in a booklet offered by Westinghouse Electric Corp.

29. Large-diameter loom beams, their use and their effect on production, are discussed and shown in a folder available from West Point Foundry & Machine Co.

30. Motor controls, safety switches, service equipment, circuit breakers, panelboards, switchboards, and bus duct are described in detail in a profusely illustrated catalog issued by Federal Electric Products Co.

31. The electro-hydraulic tensile-strength tester of Thwing-Albert Instrument Co., and its operation, construction, and application details are described in a 16-page booklet.

32. Visual production control by use of the motor-driven Chart-O-Matic control chart is described in a folder issued by Spiral Mfg. Co.

33. An inventory of machinery and equipment can be made on blank forms supplied in a booklet "Your Machinery and Its Actual Cash Value," offered by Hartford Life Insurance Co.

34. A flat-press finishing machine for cotton, rayon, and other fabrics is shown and described in a folder issued by F. Hattersley Pickard & Co.

35. Mercury-vapor lamps in 16 types are described in a booklet announced by Lamp Div., Westinghouse Electric Corp. Technical data, operating characteristics, lamp construction, and maintenance are covered.

36. Swiss stop watches which feature a non-breakable, coil-spring mechanism said to reduce the possibility of breakage and wearing out, and available in several types, are described in bulletin 576 offered by Herman H. Sticht Co., Inc.

37. Twisters made by H & B American Machine Co., and their construction features, are shown and described in a folder offered by the company.

38. Engineering and construction of new buildings performed under a single contract by John J. Harte Co. is discussed in a recent booklet. Advantages of "one contract—one responsibility—one profit" are pointed out.

39. Engineering data on selection of cast-bronze-bearing alloys are included in a booklet issued by Bunting Brass & Bronze Co. Physical-property data, characteristics, and typical uses for each alloy are covered.

40. Mechanical rubber products and special items for industrial use are described in a condensed catalog offered by Manhattan Rubber Div., Raybestos-Manhattan, Inc.

41. Instantaneous modulus of elasticity of textile materials under static and dynamic conditions as determined by the pulse propagation meter is discussed in a folder issued by Magnetic Amplifier Corp.

42. Battery-powered hand trucks made by Yale & Towne Mfg. Co., the "Worksaver" line, are completely described and shown in a new bulletin. Operating mechanisms are described and shown in detail.

43. "Allowable Working Pressures" is the title of a booklet for designers, fabricators, and users of industrial-piping systems issued by Tube Turns, Inc.

44. Two new hosiery mills designed and engineered by Lockwood Greene Engineers, Inc., are described in a recent booklet. Covered are many new trends in mill construction.

45. A new color selector for industrial maintenance finishes has been issued by Oliver Johnson & Co., Inc., Featured are the company's new Rest-I-Form one-coat Hi-Hide wall paints, as well as identification paints which meet standard regulations; also machinery, dado, and floor enamels.

46. Three surface-active agents cationic and non-ionic, which have uses as wetting agents, detergents, emulsifiers, emulsion breakers, and chemical intermediates are described in a booklet available from Armour & Co.

TO GET MORE INFORMATION

1. Fill out completely *one space* (name, title, company, address, and item number) *for each* bulletin wanted. Put only one number in each square.

2. Use only bottom card if ordering one to four pieces, both cards if ordering five to eight.

3. Detach, add postage, and mail.

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TEXTILE WORLD, New York City (April, 1948)

Memo on Modernization

ANOTHER GREAT TEXTILE PLANT SPECIFIES HUNTER EQUIPMENT

When one of the largest and most successful worsted mills in the country embarked on its program of installing new and high speed wet finishing, drying and carbonizing equipment, it also specified Hunter, because:

(a) The Hunter Continuous Washer, shown installed, enables this mill to scour cloth continuously at rates from 40 to 50 yards per minute at tremendous savings in labor, water, soap and power.

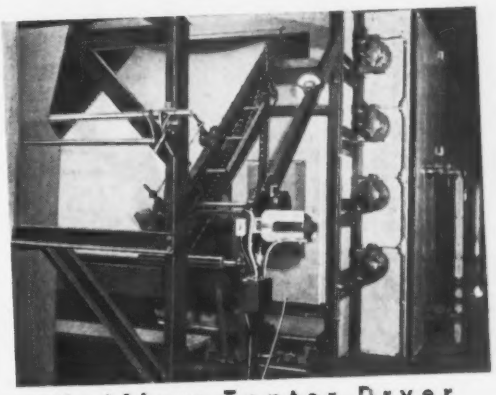
(b) The Hunter Uniflow Tenter Dryer, also shown installed, dries this plant's 12 ounce worsteds at rates up to 60 yards per minute, with one man's labor as a machine operator.

(c) The Hunter Continuous Range Piece Carbonizer affords this same plant uniform, trouble-free carbonizing at high speed rates, in a minimum of floor space and with a minimum of labor, steam and power.

If you are contemplating machine replacement or expansion in preparation, wet finishing, dyeing, drying or carbonizing equipment, we invite you to write for catalogs with more details, or we will be glad to have a competent engineer call. — Write.

Memo on Modernization

Continuous Carbonizing Range



Uniflow Tenter Dryer

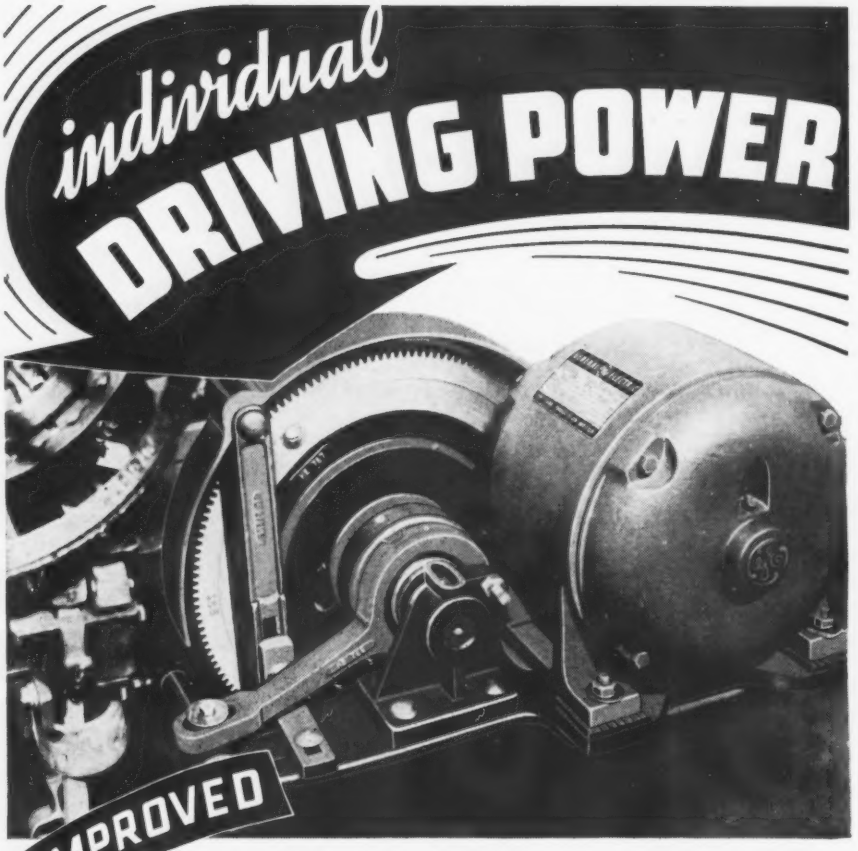
Continuous Washer Line

BUILT BY HUNTER . . . IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

Hunter

JAMES HUNTER MACHINE CO., NORTH ADAMS, MASS. FOUNDED 1847.



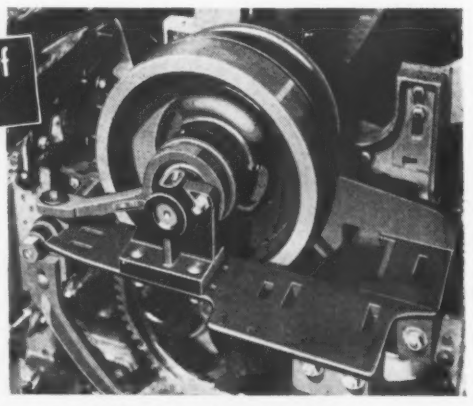
HUNT MOTOR DRIVES

make weaving more profitable!

Flywheel with removable ring gear is precision machined, and balanced in Hunt Individual Motor Drive. Absorbs intermittent shock of pick and lay motions.

Direct attachment to loom side integrates motor with loom; eliminates crankshaft strain. Ball thrust bearings save power, reduce friction, keep gears and crank arms in alignment.

made by the makers of HUNT SPREADERS



HUNT BELT-DRIVEN FLYWHEEL DRIVES

Particularly efficient when installed with patented Hunt Spreaders on older model looms. Starts from any position. Replaces "tight-and-loose" pulley drives. Flywheel interchangeable with Hunt Individual Motor Drive.

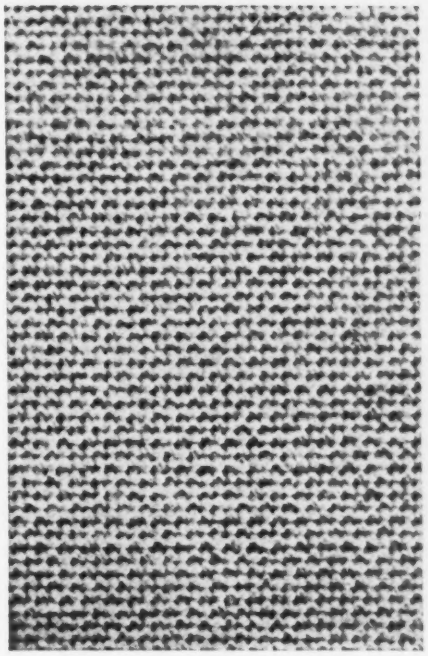
Write us for help with problems of individual or belt-driven loom drives.

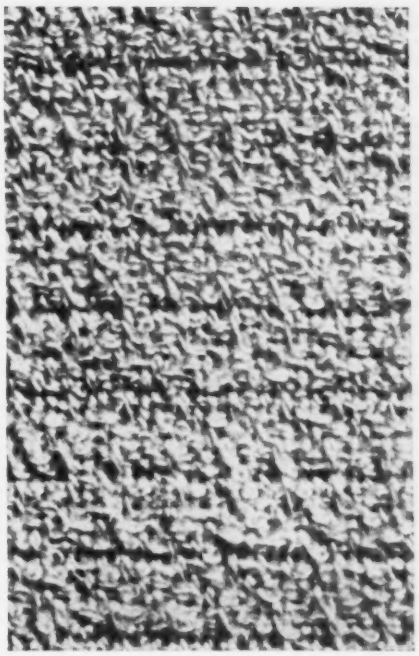
HUNT MACHINE WORKS
INCORPORATED
GREENVILLE, SOUTH CAROLINA

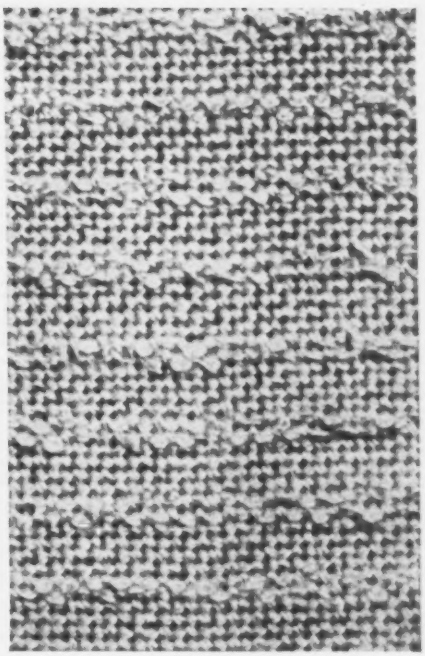
individuals who, try as they might, cannot have in full the point of view of the rank-and-file worker. Here again indications of the effectiveness of these methods must be sought through a research approach. Each time one attempts some form of attitude modification, efforts should be made to measure as accurately as possible the results. Many techniques are available, with opinion polls being perhaps the most popular and, in some ways, the easiest to use and misuse. "Canned" opinion polls rarely achieve the results desired because they usually do not get to the heart of a problem. Opinion polls should be tailored to get specific answers as to the effect of a specific effort on the part of management to modify employees' attitudes if one is to get value received from the use of research.

The area of supervisory training also requires careful and thorough investigation. Supervisory training costs money in terms of personnel involved even if done efficiently; it costs even more when done ineffectively. Certainly the starting point of any supervisory training program is determining needs; not just general needs, but the needs of the specific supervisors involved. So-called packaged or canned plans of training, usually brought in from the outside, rarely meet the needs of the supervisors in a specific mill or plant. One obvious way of getting at training needs is the much-misused questionnaire technique. This method should be supplemented with a careful study of duties required of our supervisors and the study of specific conditions, such as the use of formal warnings, which indicated training needs. Do not plan to make one survey of training needs at this level and stop; plan to study constantly needs and revise the program accordingly.

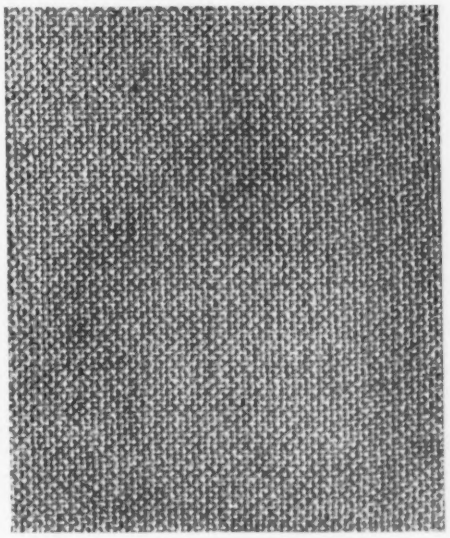
SUPERVISORY TRAINING. What of the methods used in supervisory training? There are numerous arguments for the advantage of the conference method in training supervisors. It has its disadvantages also, particularly from a time-consumption viewpoint. One advantage claimed for it is that supervisors react more favorably to it than to other methods; but a survey showed that supervisors were not unanimous in agreeing that it was the most desirable method of instruction. In fact, as many prefer other methods, such as the lecture and lecture-discussion. This indicates the need for a research approach to this problem. Certainly matched groups of supervisors, taught the same topic by different methods with outcomes carefully evaluated, would give dependable information on which to plan supervisory-training techniques.







Preferred by home-makers... drapery and upholstery fabrics made with Lanese* synthetic fiber



These home furnishing fabrics are typical of the wide variety of weaves and textures available through the use of Lanese . . . light or heavy home-spun constructions . . . textured surfaces . . . ratiné fabrics of luxurious weight and deep texture. Despite their weight and regardless of the area over which these fabrics are hung, they possess excellent dimensional stability. Tests in use have shown that the length they are hemmed is the length they remain, for they stay true to size despite wear or cleaning. Furthermore, fabrics of Lanese can be designed for sound control, breaking up or absorbing sound waves. They provide excellent light control, blocking sun glare, yet permitting the passage of light. And because they can be constructed with dimensional stability, fabrics of Lanese can be used to partition modern spacious rooms.

Celanese* Lanese*

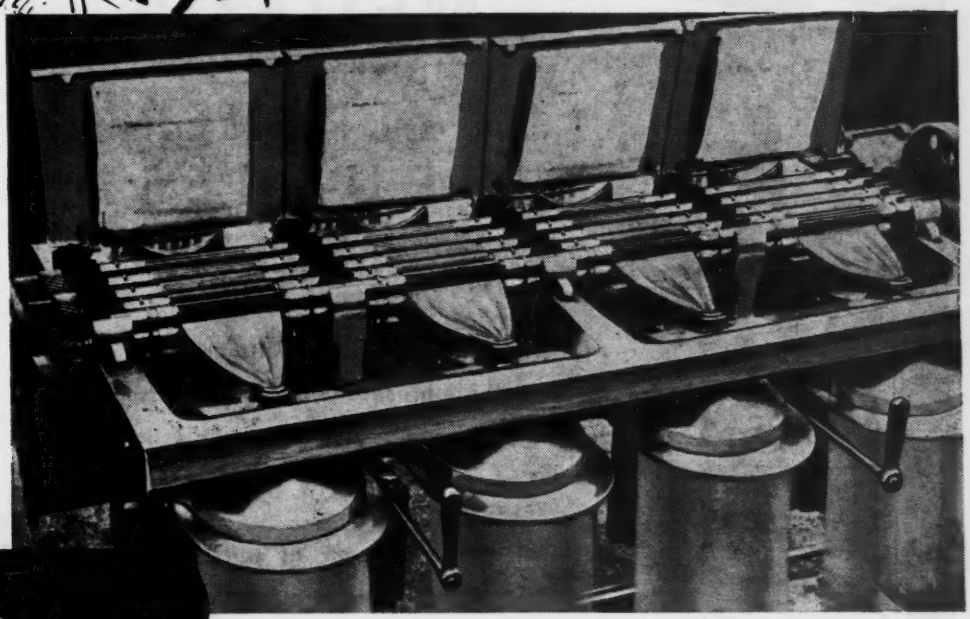
SYNTHETIC STAPLE FIBER

CELANESE CORPORATION OF AMERICA, 180 MADISON AVENUE, NEW YORK 16, N. Y.

Branch Offices: PHILADELPHIA 7, 12 South 12th Street • CHARLOTTE 2, 1106 Liberty Life Building • BOSTON 10, 140 Federal Street

*Reg. U. S. Pat. Off.

"Pardon me, but Your Sliver's Showing!"



Reduce costly 'Ends Down' and get a more Uniform, Grease-free Sliver with

Medley drawing!

Yessir, all along the line a poor sliver shows itself . . . in ends-down and resultant lagging production . . . in inferior finished yarn. Grease spotted slivers, too, contribute their share of production headaches.

Medley tackled these problems at a spot where most of the trouble was known to be—the drawing sliver. Result? The Medley Drawing Frame—featuring the now famous "Eight Ends Up," or the conventional 6 ends up drawing with the sealed-in ball-bearing top rolls. The Medley top drawing rolls are ground to near zero tolerance giving the much sought uniformity in the drawing sliver—the sealed-in permanent lubrication assures a grease-free sliver.

Check with Medley—learn how your present drawing can be changed over to the more efficient Medley—watch "ends down" go down—production go up.

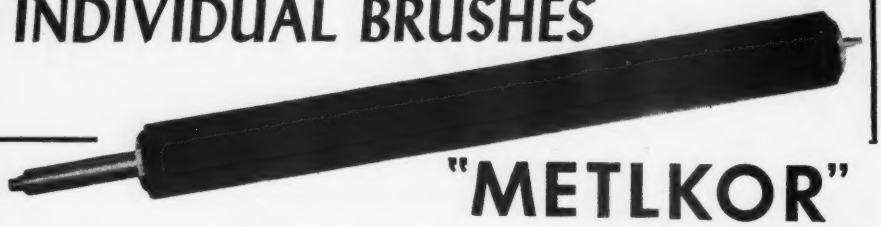
Medley has it—or Medley will make it.

The MEDLEY System, Inc.

400 32nd ST., COLUMBUS, GEORGIA

Medley Manufacturing Co., Columbus, Ga. • Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C. • Allan Textile Machine Co., Pawtucket, R. I.

THIS 80 INCH BRUSH IS REALLY MADE UP OF 61,440 INDIVIDUAL BRUSHES

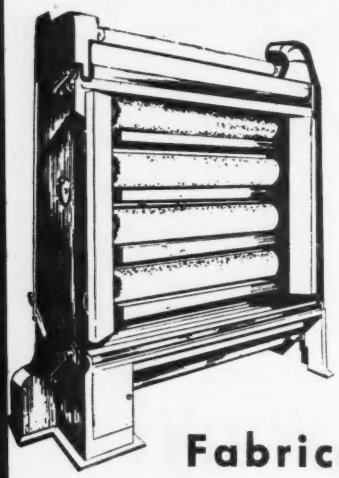


"METLKOR"

(TRADE MARK Reg. Pending)

CYLINDER BRUSHES

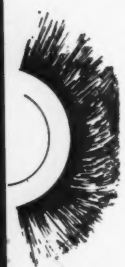
for Textile Brushing Machines



. . . give better brushing results because bristle in these brushes is *arranged in tufts,* set in metal, and sealed in with plastic cement.

Each of the thousands of tufts in a Jenkins' "Metlkor" brush *acts as a separate brush,* with an efficient whisking action.

Fabrics are thoroughly *brushed not abraded*



WRONG

. . . as they may be by unyielding bristle, when set in solid rows.

RIGHT

Tufts, becuase they use the natural resilience of the bristle, *are longer in contact with the fabric,* in a firm but gentle pressure, effective but not harsh.

FABRICS ARE BETTER BRUSHED AND BRISTLE LASTS LONGER IN JENKINS' TUFT-SET "METLKOR" BRUSHES.

These brushes are nippled by all manufacturers of brushing machines on specification.

Send for our catalog of Brushes for Textile Processing

M. W. JENKINS' SONS, INC.

CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

Raw-Nylon Size

(*Continued from page 129*)

the entire amount of PMA has been added, the solution should be agitated until no lumps are present.

Following the addition of PMA, glycerine or ethylene glycol should be added with continued agitation. Sufficient heat is then applied to bring the solution to the operating temperature.

When oils are added, excessive agitation should be avoided, since troublesome foaming may occur. It is suggested that oils be added only after the solution reaches the operating temperature and then with a minimum of agitation.

In sizing with a PMA-glycerine or PMA-ethylene-glycol formulation, the temperature in the size box should be maintained at 150° F. Whenever sulphonated mineral oil is included in the size, the temperature should not exceed 130° F. This lower temperature is necessary since prolonged overheating has caused irreversible separation of the oil in tests.

Laboratory experimental work has been limited to trial runs on a 24-in., seven-can Johnson slasher, while field trials were performed on five, seven, and nine-can slashers. No particular differences were noted in any of these. The amount of stretch given the trial warps has never exceeded 1%.

Nylon warps should be immersed to achieve optimum penetration and size pick-up. The depth of immersion varies with each slasher; since quetsch-roll pressures, temperatures of solution, etc., affect the size pickup. Generally, one-half to full immersion is the range best suited to nylon.

It is usually necessary to use the maximum pressure attainable on ordinary dead-weight quetsch rolls. Since experience on pneumatic systems is limited, the quetsch-roll settings should be determined initially by feel of the wet warp and break at the head end of the slasher. Size pick-up and weaving performance will govern subsequent operations. Because of the tackiness of PMA solutions, the use of felt boots or other cloth covers on quetsch rolls is not recommended.

SIZE PICK-UP. In the tests, total size pick-up (combined PMA and plasticizers) range from 3.5 to 7% dry size based on the dry weight of the yarn. For instance, a 135-sley, 70/34 7Z type 200 warp slashed with formula No. 1 at 150° F. carried an average of 4.6%.

Cloth covers are not recommended for dry cans, since they become coated with PMA and thereby promote sticking ends and sandy warps. Bare cans consistently produced smoother warps.

Temperatures on a seven-can slasher

For Quality

For Convenience

IN VAT DYEING

SPECIFY

SOLVAY

TRADE MARK REG. U. S. PAT. OFF.

LIQUID POTASSIUM CARBONATE

For simplified handling . . . ease of use . . . convenient storing—insist on SOLVAY LIQUID POTASSIUM CARBONATE

SOLVAY SALES DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

BRANCH SALES OFFICES

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

which have given good results in experimental work are as follows:

160°-180°-200°-200°-200°-200°-cold.

However, each mill is advised to watch the cans closely and to adjust the temperatures to obtain a dry, smooth warp without the formation of size deposits on the dry cans.

PMA-sized warps generally exhibited a satisfactory break at the split rods, according to the Du Pont technicians. With normal size pick-up and proper drying on the cans, the split should occur well before the warp reaches the first bar.

In recent experimental work using a silk-system slasher, no split bars were used because of the easy split of warps sized with PMA-sulphonated-oil formulations.

WEAVING. Medium and high-sley taffetas have been more difficult to weave than other constructions, in any denier range. In taffetas, the following deniers and sleys have been successfuly woven:

40/34 7Z type 200, 175 sley on loom
70/34 7Z type 200, 135 sley on loom
100/34 7Z type 300, 120 sley on loom
210/34 7Z type 300, 80 sley on loom

It is suggested that warp yarn within the range 20 to 100 den. be twisted to seven turns or more per inch for initial trials. In denier counts above 100, five turns or more are suggested. Reduction of warp twist below these limits will be governed by individual mill performance.

TINTS. Any tints considered for aplication to nylon should be tested for fugitivity after slasher sizing the yarn with a PMA formulation. This precaution is necessary since the acidity of the size solution may set certain otherwise fugitive tints.

Aqueous solutions containing 1% to 10% PMA are acid (pH 4.0 to 3.8). PMA solutions are non-corrosive to stainless steel and aluminum. Other metals used in slashing and auxiliary equipment may be attacked when they come in direct contact with PMA solutions because of the low pH value. Tests indicate that dry PMA does not corrode looms.

Non-stainless-steel dry cans may be used if no heavy size deposits are allowed to build up during slashing and if they are washed carefully after each run.

PMA's acidic nature renders it incompatible with many of the common size materials. Therefore, it is essential that all lines and kettles be thoroughly cleaned of foreign materials with steam or some cleaning agent before a PMA size solution is used. Otherwise a rubber-like precipitate

We make our card stripping PAY DIVIDENDS — 4% greater production per card

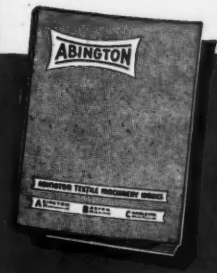
ABINGTON

VACUUM CARD STRIPPING SYSTEM

Here is a card room in which 554 cards are equipped with the Abington Vacuum Stripper. This system automatically strips cylinder and doffer in one operation. One man can strip 675 cards per 8-hr. shift. In addition, Waste Stations are provided which collect flat strips, comber noil and other process waste, all waste and strips being delivered by vacuum piping to a central waste house, which may be located within or outside the main mill.

In hundreds of mills, results like these---

***Request:* "COTTON STRIPPER CATALOG"**



Nearly 900 mills have turned a nuisance operation into an advantage, obtaining greater production, improved quality and lower costs, as follows:

1. Production increased 4% or more because of less down time for stripping.
2. Direct stripping cost reduced 60% to 90%.
3. Stripping 100% by vacuum (no brush touches the clothing) keeps card wires in better condition with less frequent grinding.
4. Extra thorough stripping gives cleaner silver, less fly, better quality of product. 100% dust free.

One mill states: "One man alone strips 225 cards 3 times daily." Another says: "We only have to grind 2/3 as often to keep wires in good condition."

Write NOW for full information

ABINGTON TEXTILE MCHY. WKS. VACUUM CARD STRIPPERS
YARN DYEING SYSTEMS • WEAVER'S KNOTTERS

FRED H. WHITE, Gen. Mgr.
Home office: 19 Congress St., Boston, Mass. Southern office: Johnston Bldg., Charlotte, N. C.

BARBER-COLMAN

M.C.C.

ELECTRONIC
MOISTURE CONTENT
CONTROLLER

This new and improved *all-electronic* controller provides accurate, dependable automatic control of all functions of slasher operation. Moisture content control not only improves production quality, production quantity, and production economy but also reduces the need for unnecessarily high atmospheric relative humidity in the weave room. The new all-electronic MCC unit offers a number of advantages over earlier models — there are no open relay contacts and very few moving parts, thus assuring maximum performance with minimum maintenance — the compact cabinet can be mounted on a floor pedestal (as above) or a wall bracket — a single model is now applicable to all types of warp or cloth as processed on slashers, dryers, or tenters — calibration adjustments are improved and simplified — an improved control circuit will handle any type of variable-speed drive — and accessibility is improved through use of a single door.

Send for Bulletin F3156 for complete information on the all-electronic MCC. Learn how it can help to solve your drying problems. Ask your Barber-Colman Representative for specific advice on your requirements.

BARBER-COLMAN COMPANY
ROCKFORD • ILLINOIS

may be formed, clogging the lines and/or contaminating the PMA size solution. Optimum operation cannot be realized if the size solution is heavily contaminated with foreign materials which may be picked up by the warp passing through the size box. The size solution should always be filtered before it enters the size box. The filter should be watched carefully during the first few runs to obviate any possibility of clogging and overflow.

Cotton-Rayon Blends

(*Continued from page 127*)

one of Smyre's unique blends—is 1⅝ in., 1.5 den. Du Pont staple. For this rayon, 13-oz. picker laps are made after a minimum opening-picking processing. The laps are carded into 80-gr. rayon sliver at a draft of 71.68.

Cotton breaker-drawing with 6 ends up has 8.57 draft, makes 42-gr. sliver, and produces 13.97 lb. per hr. from one drawing delivery at 350 rpm. of the front roll. Roll settings are 13/16, 1 11/16 and 1 14/16 in., back to front. The rayon breaker-drawing produces 60-gr. sliver at a draft of 9.84.

On new double-sided Saco-Lowell combers, the 100% production rate is 48 lb. per hour for the special combed-cotton part of Smyre's blend. Sliver produced is 60-gr. at a draft of 70.20. About 13% of the short fibers are removed as noils. The machines comb at 97 nips per min. Roll settings, back to front are 1⅜ in., 1⅝ in., and 2⅛ in.

Unique blending of combed cotton and rayon is done on a lap winder where 70% cotton and 30% rayon is obtained by creeling 11 cans of combed-cotton sliver and 5 cans of rayon sliver. The lap machine produces 152 ft. of 923-gr. sliver per min., at 110 rpm. of the calender roll and a table draft of 1.04.

Smyre's finished drawing uses Saco-Lowell's controlled-draft system. The lap-fed machines (not pictured) produce 70-gr. sliver of the combed cotton-rayon blend. Draft is 13.42, and the production rate (100%) is 20 lb. per hr. from one delivery. Other production details of the special blend are: 280 rpm. front roll; roll settings (back to front), 1⅝, 1 7/16, and 2 in.

Roving, spinning, and winding of the combed-cotton-rayon blends fol low conventional practice. Woonsocket slubbers and Whitin Interdraft speeders prepare the roving for spinning.

The 11x5½-in., 76-spindle slubbers make 0.26 hank roving at a 3.02 draft and 0.53 t.p.i. Roll settings are 1½ and 1⅝ in.

Interdraft speeders produce 3.00-

hank roving at a 16.66 draft and 2.06 t.p.i. The mill finds that 19 layers of roving per inch are the most practical for the hank roving. Rollers are set at 15/16 and 1 10/16 in.

Spinning frames (see photo) have Westinghouse lint-free motors applied to Allis-Chalmers vari-speed drives. Pneumafil waste-collection supplants conventional scavenger rolls on some of the spinning frames.

Many of Smyre's winders are new Model-102 Foster machines. Yarn numbers made from the combed-cotton-rayon blend are 18s and 30s in varieties of knitting twists.

Moisture Meter

(*Continued from page 143*)

sistance of the material is indicated on a meter, which is scaled in per cent regain. The resistance varies inversely with the amount of moisture in the sample.

The instrument is manufactured by The Record Electrical Co., Ltd., Broadheath, England. It may be used on raw cotton, cotton yarn and cloth, rayon, scoured wool sliver, yarn, and knitted and woven fabrics without oil. For each of these groups, the instrument must be calibrated and a conversion chart set up; for, although the meter results are expressed as per cent regain for cotton, each instrument requires individual calibration, if the regains are standardized to oven results; also, some materials have different qualities of conductivity than others. The calibration once done, however, remains nearly permanent, as the instrument's design is comparatively simple and mechanical difficulties are rare.

It operates only on alternating-current supply and contains a transformer with tappings connected to a number of sockets to cover a range of voltages from 200 to 250. If used on a 110-v. line, a separate transformer must be used to transform 110 v. to voltage within the 200-250-v. range. Fluctuations in the main voltage are corrected by simple adjustments before every use.

TO TEST. To perform a test, the electrode is pressed against the sample with increasing pressure until the needle on the scale stops moving. The per cent regain is read from the scale. Readings should be taken from several places on the sample, since there is some variation from place to place. An average of these readings will give a representative value for the sample.

There are two electrodes, the "raw cotton" and "cotton-yarn", the use of which depends on the material to be tested. The correct electrode is in-

BARBER-COLMAN

ELECTRONIC TEMCHRON

SIZE COOKING CONTROL

TEMCHRON, the only *completely electronic* time-temperature cycle controller, provides hitherto unattainable accuracy, flexibility, and reliability in the control of size cooking. Identical cycling is assured from batch to batch, for any dial settings, yet simple adjustments permit cycle changes as required by different size formulas. Changes in any part of the cycle — warm-up time, cooking temperature, cooking time, or holding temperature — can be made *by simply resetting calibrated dials.* Lights on the panel indicate when the size mixture is being raised to cooking temperature, when the size is cooking, and when the cooking is completed and the mixture is at the desired holding temperature. Cooking and holding temperatures are independently adjustable within a range of 100°F to 210°F. Length of warm-up time is adjustable from 15 to 90 minutes, and cooking time from 20 to 180 minutes.

This picture shows how a lockable door permits access to all time and temperature adjustments. Write today for Bulletin F3054 describing details and applications of the TEMCHRON.

BARBER-COLMAN COMPANY

BOSTON, MASS. • GREENVILLE, S. C. • GREENSBORO, N. C.

REDUCE YOUR LINT FIRE LOSSES...

WITH

THE MASTER OF FLAME
ANSUL*
*REG. U.S. PAT. OFF.
FIRE EXTINGUISHING EQUIPMENT

DRY CHEMICAL 4

Listed and Approved by Underwriters' Laboratories and Factory Mutual Laboratories.

FIRE EXTINGUISHERS

MORE EFFECTIVE • MORE DEPENDABLE MORE ECONOMICAL FIRE PROTECTION

The Ansul 4 Extinguisher instantly smothers lint fires and protects unburned lint with a harmless, fire-resisting layer of Ansul Plus-Fifty Dry Chemical.

• Ansul Dry Chemical is non-corrosive, non-abrasive and IT IS DRY. A speedy put-out with an Ansul 4 Fire Extinguisher eliminates costly shutdowns for repair of corrosion damage or for clean-up after sprinklers operate.

This small, compact extinguisher is particularly adapted for protecting many lint fire hazards common to the textile industry . . . cards, twisters, looms, etc.

Many mills, equipped with Ansul Dry Chemical Fire Extinguishers, have saved thousands of dollars by stopping lint fires FASTER without damage to delicate machinery or to the product manufactured.

For picker rooms, opener rooms and other locations where large masses of cotton are handled, the larger capacity Ansul 20 and Ansul 30 Dry Chemical Fire Extinguishers are recommended.

All Ansul Dry Chemical Fire Extinguishers are approved for use on fires involving live electrical equipment.

Send for more information. You will receive factual data on how you can reduce fire losses in your mill.

Model 20 Model 30

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

serted into a handle; and, in testing, the handle must be held perpendicular to the base upon which the sample rests. Since the act of pressing the electrode against the sample is fatiguing, a constant-pressure device is available (Fig. 2). The device exerts a pressure of 45 lb. and has a handle by which the electrode may easily be raised and lowered when the sample is placed below it. The sample should be so arranged that about the same thickness of material will be present at all spots tested. The distance between the face of the electrode and the base upon which the sample rests should be between $\frac{1}{8}$ and $\frac{1}{4}$ in. for loose samples. The constant-pressure device can be adjusted to the distance which produces the most consistent results.

There are three scales, the choice of scale depending on the expected range of results. The dry range covers values of 4.50% to 9.00%; normal range, from 6.50% to 11.50%; and the damp range from 9.00% to 15.00%. Results can be estimated to the second decimal place.

The sample size is not critical, but should be large enough to afford several spot readings. Yarn and cord may be tested without removal from the bobbin or spool. Closer agreement with oven regains will occur if several layers are removed from the outside before testing, than when outside layers are tested.

Visual Tests

(*Continued from page 137*)

are the most important to textile workers:

Distant acuity—ability to see properly at a distance of 20 ft. or more, with each eye, and with both eyes simultaneously.

Near-point acuity—same as above for a distance of 16 to 20 in.

Depth perception—ability to judge relative distances.

Field of vision—ability to see up and down and to right and left without moving the eye.

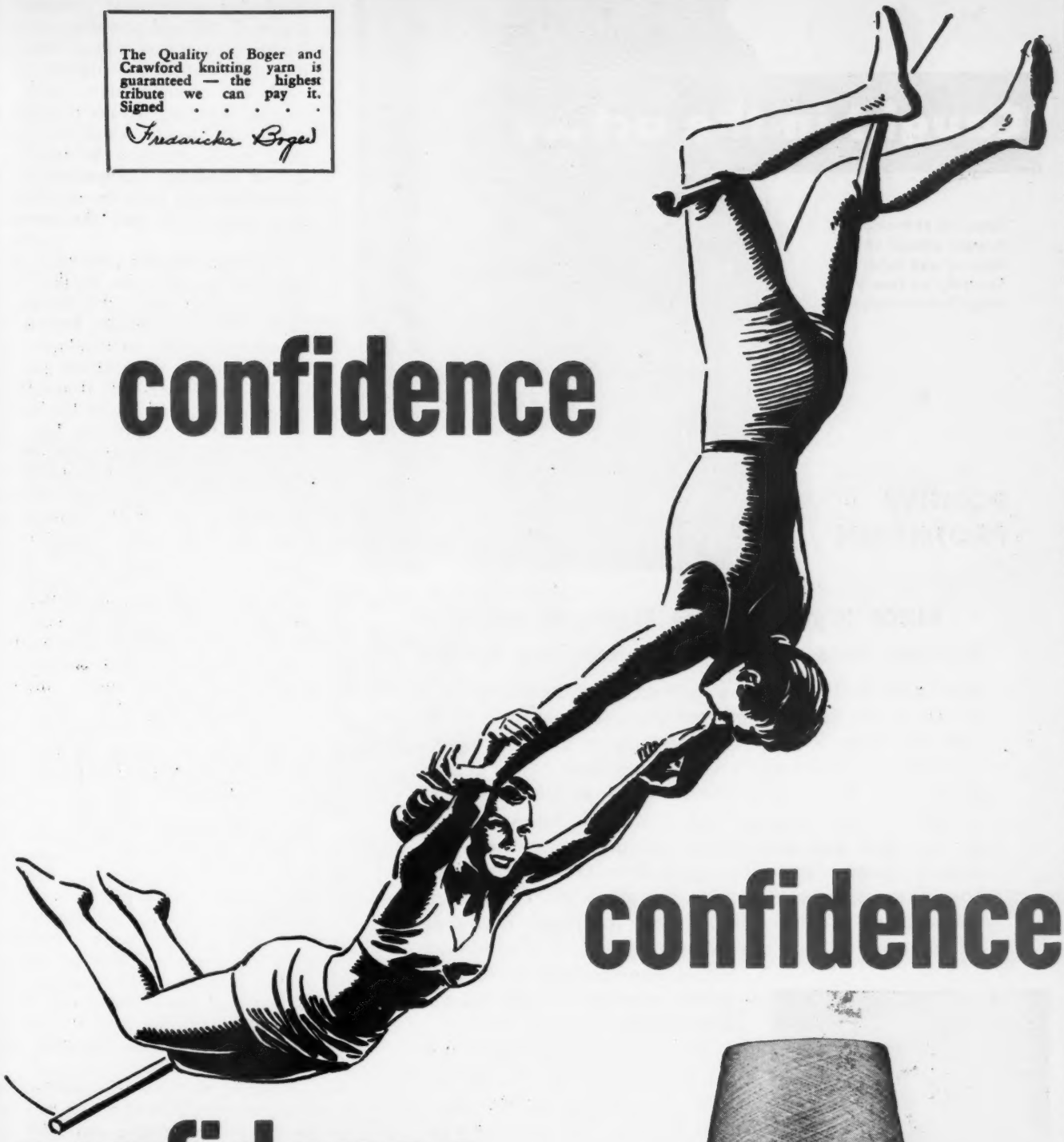
Color discrimination — ability to distinguish colors.

In view of the technical factors involved in good employee vision, company management usually finds it wise to obtain the services of a vision specialist early in its program. The optometrist is such a specialist. He makes a complete visual analysis and prescribes and adapts ophthalmic aids, or administers visual training where necessary. He detects disease of the eye, and where present he refers the patient for other professional care.

COMPANY PROGRAM. A company may procure professional service by

The Quality of Boger and Crawford knitting yarn is guaranteed — the highest tribute we can pay it.
Signed . . . . . .
Frederick Boger

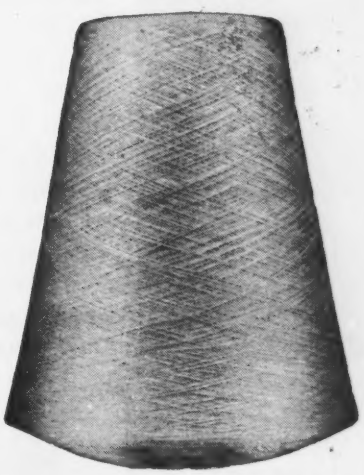
confidence



confidence

confidence

. . . A proven characteristic of Boger and Crawford. Our high Quality yarns and forthright business dealings for over forty years warrants the confidence a growing majority in the knitting industry manifests for our yarn. Let us help YOU make your product one of merit.



BOGER & CRAWFORD

MERCERIZED YARNS

PHILADELPHIA, PA. • UTICA, N. Y. • BOGER CITY, N. C. • BOSTON, MASS. • CLEVELAND, OHIO

Caught in the act...

Close-Up of Tramp Iron Caught Ahead of Opener and Held Securely on Face of a Dings Textile Magnet

POSITIVE PROTECTION

DINGS High Intensity Electro-Magnets Prevent Fires Caused by Tramp Iron Sparks

Here's a positive way to stop tramp iron in the opener-picker room before it causes dangerous cotton fires. The importance of this protection is obvious when considering that even small cotton fires cause costly production stoppages. Dings Vertical Plate Electro-magnets give you maximum protection because they are the most powerful textile magnets available—will extract tramp iron eight inches from face—more than any other magnet. Simple to install in ducts and operated at negligible cost . . . easy to clean—just shut off current and iron drops into a trap . . . corrugated non-magnetic face plate prevents sparking when tramp iron strikes magnet.

Write for recommendations on the best and most economical magnetic protection equipment. *Dings has the magnet for your purpose, either Permanent Alnico or Electro.*

Dings Textile Magnet installation showing trap for tramp iron below magnet.

DINGS MAGNETIC SEPARATOR CO.
4700 W. McGeogh Avenue, Milwaukee 14, Wis.

"HIGH INTENSITY" **Dings**

Separation Headquarters Since 1899

employing professional personnel as a part of staff and providing adequate facilities, or it can engage the services of an outside practitioner.

Optical manufacturers have developed screening devices designed to determine quickly which employees need visual attention to meet prescribed standards. Comprehensive examinations can then be confined to those who fail to pass the screening tests.

In many companies, the only visual test given is with the Snellen letter chart—reading letters at a distance of 20 ft. This test provides little or no information about an employee's visual capacity for a particular job. In fact, in one hosiery mill it was found that girls who rated low on the Snellen letter chart test were the best producers on the looping operation which required good near-point vision. They, of course, needed correction for distant vision, but if that company had used the Snellen test alone it might have eliminated many of its best employees.

It should be kept in mind that employees differ as much in visual capacities as in other characteristics. Fortunately, jobs differ similarly in requirements, so that almost any employee can be matched to a job suited to his visual capacity. The purpose of a vision program is not to weed out employees but to detect and correct visual inefficiencies.

WHERE TO START. A good place for a textile mill to begin a vision program is with its inspectors. Finding and training good inspectors is usually a difficult problem, and the importance of the vision factor is not generally recognized. Beginning with a modest program of examination and correction of the vision of inspectors, a company can progress to a more comprehensive program for other categories of employees.

Another method of launching a vision program is to set up pre-employment visual standards, and after experience with this expand to application of the same standards to employees already in the plant.

Still another method of growing into a full program is to begin with employees in hazardous jobs who should be fitted with protective goggles. It is obvious that employees who need lenses to see properly should have safety goggles with corrective lenses, and this group may be given examinations to determine their needs. This usually demonstrates dramatically the need for systematic vision care of all employees.

To the vision specialist or the company with experience, the benefits of a comprehensive program are so clear

dyeing—The effective protective surface action of Santomerse No. 1 makes it a desirable additive to dye baths because of its leveling effect. It can be used prior to dyeing to wet out thoroughly and to assist penetration, or can be added directly to the dye bath.

more effective dyeing SANTOMERSE No. 1 scouring

scouring—Santomerse No. 1 is neutral in water solutions. Its high detergency value and ease of rinsing make it an excellent scouring agent for all fibres. Depending upon the operation and the soil to be removed, Santomerse No. 1 is used in amounts of from eight ounces to three pounds per 100 gallons of solution.

Santomerse: Reg. U. S. Pat. Off.

Textile dyeing and scouring operations are more effective, more economical with Santomerse No. 1 —the modern, all-purpose synthetic detergent and wetting agent.

This widely used Monsanto product fulfills *all three* requirements—*penetration, wetting out, scouring.* In addition, it is characterized by:

Stability to acid, alkali, hard water.
Formation of soluble metallic salts.
Quick rinsing without insoluble deposit.

To obtain complete data on many Santomerse No. 1 applications in the textile field, send for Bulletin No. P-118. Use the convenient coupon below, or write to MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

District Sales Offices: **New York, Philadelphia, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle. In Canada: Monsanto (Canada) Limited, Montreal.**

SERVING INDUSTRY ...WHICH SERVES MANKIND

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CHEMICALS — PLASTICS

MONSANTO CHEMICAL COMPANY TWP-1
Phosphate Division
1700 South Second Street, St. Louis 4, Missouri

Please send me Application Data Bulletin No. P-118, on Santomerse No. 1.

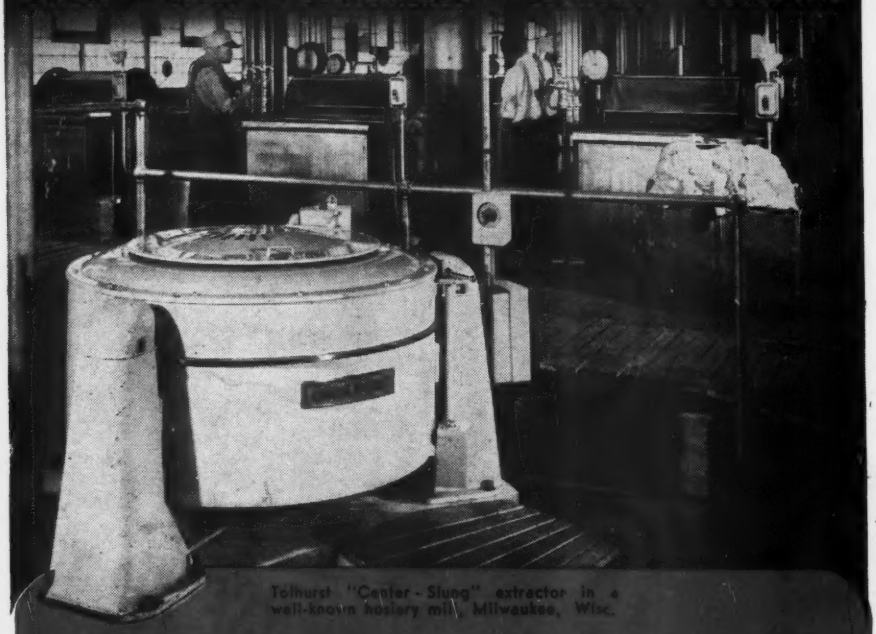
Name_____ Title_____

Company_____

Address_____

City_____ State_____

SAFETY • SPEED • CONVENIENCE • ECONOMY • DURABILITY



Tolhurst "Center-Slung" extractor in a well-known hosiery mill, Milwaukee, Wisc.

TOLHURST "CENTER-SLUNG" EXTRACTORS
Especially Designed for Textile Mills

IN MODERN, progressive textile mills, where efficiency is the watchword, Tolhurst "Center-Slung" extractors have been acclaimed favorites for years. These sturdily constructed extractors provide high productivity at low cost, combining speed with economy in handling large loads. Tolhurst "Center-Slung" extractors run smoothly even with unbalanced loads, because baskets are free to find their own center of gyration. 40", 48", 60", 72" and 96" basket sizes. For smaller loads, Tolhurst extractors are also available in 20" and 30" diameters. ***Write for illustrated catalogs and prices on these Tolhurst textile extractors.***

Improved AUTOMATIC TIMER CONTROL

Makes operation automatic from the time "start" button is pushed to the moment the brake stops the finished load, after predetermined cycle. Standard equipment on 40" and 48" Center-Slung extractors and available at small additional cost on 60" and 72" Center-Slungs. Other Center-Slung features include stainless steel basket, automatic safety cover, and "V" belt motor drive.

LABORATORY SERVICE AVAILABLE

Consult Tolhurst on all extractor problems. Tolhurst maintains a complete staff of experienced engineers with modern research facilities.

TOLHURST CENTRIFUGALS

Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS
In Canada: American Machine and Metals (Canada) Ltd.
215 St. James Street West, Montreal 1, P. Q.

that half-way measures or no program at all are serious shortcomings whether measured in dollars and cents or in employee welfare. To the company without experience, the important thing is to get started. The idea will sell itself if given a chance.

Employee Training

(*Continued from page 145*)

In the group studied, certain trainees made production on an average in less than eight months; an equal number averaged over 13 months before making production. A third group required on an average about ten months. These differences became more pronounced with increased amount of training.

After between 120 and 140 hr. of training, the differences between the groups were so pronounced that one could predict with a high degree of accuracy the relative standing of trainees at the end of 15 months on the job on the basis of their production at the end of their first month on the job. It was figured that if, had both the superior and average group been retained, approximately $375 would have been saved per employee in make-up pay over the period of 15 months. These curves are now being used in evaluating the progress of trainees. Data were collected without any interruption of production.

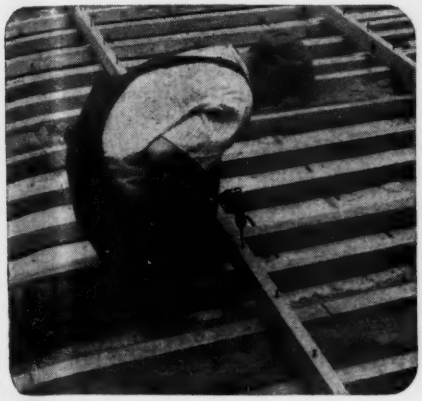
Another problem which is ever present in training industrial workers is that of how to space practice. One authority states in effect that if 8 hr. were allotted in which to teach a given task, the practice on this task would be more effective under the majority of conditions if the 8 hr. were broken up into some arrangement involving practice and nonpractice rather than spending the entire 8 hr. in practice. In an industrial situation there are practical administrative problems involved in spacing practice. "We pay the learner for 8 hr. work, and we kid ourselves that we get this full 8 hr.," Dr. McGehee declared. "Yet many jobs in industry require different operators which can be taught separately. Certainly careful planning of the training program would provide for the advantages of spaced practice without rendering the trainee idle for any appreciable part of the day. However, before you rush back home and institute spaced practice in your training routines, let me caution you that we have no data on its effectiveness in an industrial situation."

Conditions related to spaced-practice effects must be studied for each job. At the present time, Fieldcrest Mills is in the initial stages of trying out spaced practice in the vestibule period of one of its more complicated

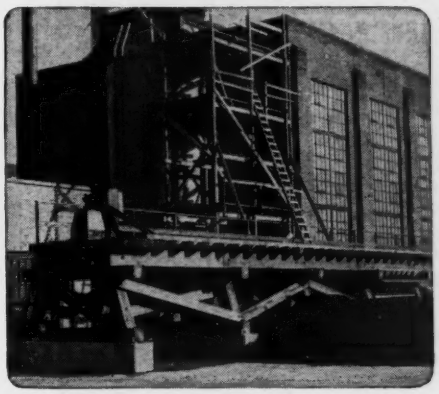
6 common conditions

where *WOLMANIZED PRESSURE TREATED LUMBER

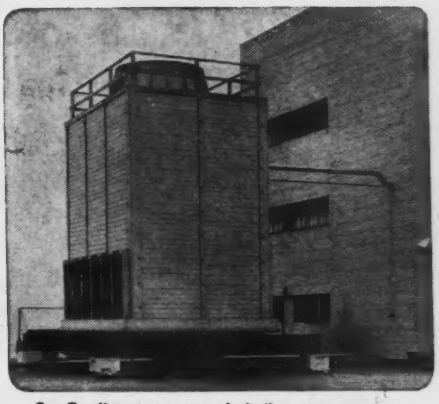
protects against DECAY and TERMITES



1. Wherever moisture is condensed because of concrete or masonry.

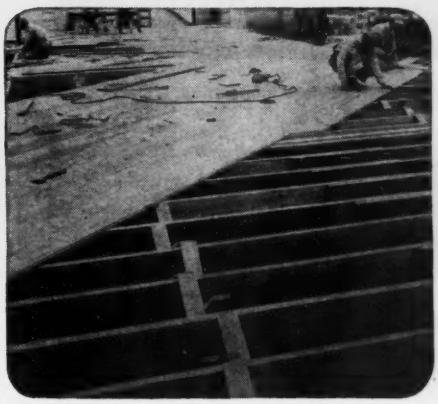


2. Ground moisture and rain held in joints, etc., of outdoor structures.

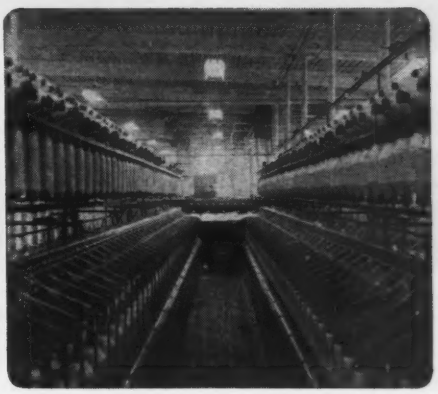


3. Cooling towers and similar structures exposed to direct water contact.

4. Where steam and vapor from industrial processes are prevalent.



5. Wood used in or near the ground open to attack by termites.



6. Wood exposed to moisture in artificially humidified buildings.

LASTS FOR DECADES

Imagine the saving in maintenance which you could realize by using lumber which is protected against wood-decay and termites. "Wolmanized" pressure-treated lumber offers just such protection—lasts 3 to 5 times as long as ordinary wood.

Actual service records prove it. Best of all, the extra cost of this pressure-treated lumber is less than the cost of labor alone in replacing prematurely failing, untreated wood.

Wolmanized lumber is pressure-treated with salts which are toxic to decay fungi and termites. The treated wood is clean, odorless, paintable and non-corrosive to metals. For lower maintenance costs—sounder buildings—investigate the advantages of using Wolmanized lumber in your building program.

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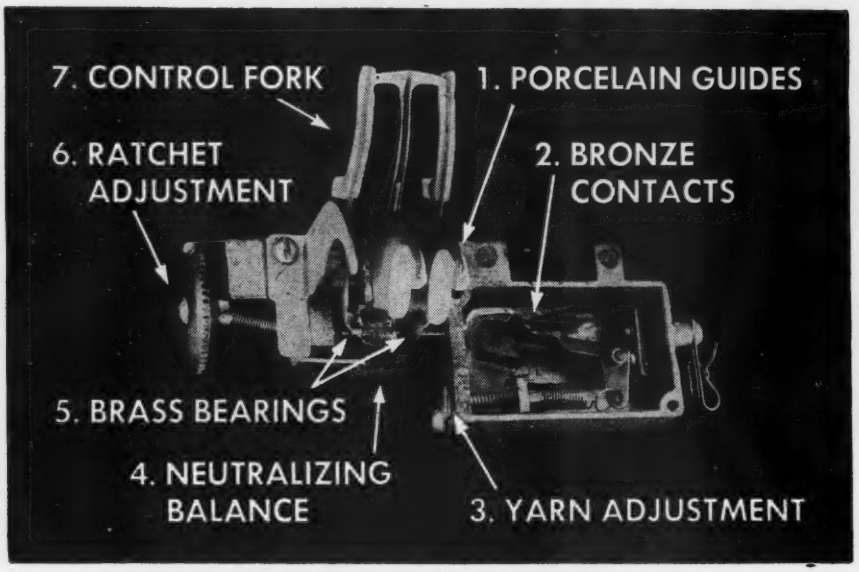
AS HUNDREDS HAVE...



Crawford Spider Box the Controlling Unit of the Crawford Stopmotion.

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ELECTRIC STOPMOTION

Features

1. Porcelain Guides, smooth, frictionless, long wearing.
2. Bronze Contacts, non-arcing, long lasting.
3. Yarn Adjustment for each specific weight of yarn.
4. Neutralizing Balance gives sure, even action and yarn control.
5. Brass bearings insure long life and uniform, smooth action.
6. Ratchet Adjustment assures automatic action and protection for all yarn strengths.
7. Control Forks automatically protect your machine from damage due to uneven, faulty or broken yarn.

FOR MORE PRODUCTION, GREATER UNIFORMITY

In the last 50 years hundreds of knitting mills have installed Crawford's Electric Stopmotion, *proved to bring out the best in their machines!*

Crawford Electric Stopmotions have kept abreast of the development in design and performance of knitting machines, and in each instance are designed, engineered and refined for the *specific* machine you buy.

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jobs. The experiments have not gone far enough yet to get dependable results, but the increased interest and motivation of the trainees involved is a favorable sign.

AID TO METHODS STUDY. While the problem of the best way to perform an operation may be the special province of the methods department, this question frequently arises in establishing a procedure for training. Further, best methods cannot be established by debate but must be studied under conditions which give dependable answers. For example, in training a group of operators, it was found that certain of the trainees were working from right to left while others were working from left to right. It was not known which method was the more efficient. Further, in the actual job, conditions existed which could not be held constant for isolation of the effect of the direction of work. A relatively simple experimental setup was devised analogous to the total operation but allowing investigation of the problem of direction of movement without interference from extraneous factors. On the basis of this study, relatively dependable data were obtained which indicated that time could be saved in the operation if trainees were instructed to work from the right to the left.

Most persons will agree with the thesis that an experienced production worker without special training in instruction is usually a poor trainer for learners. Recently, this assumption was submitted to research verification. The results of the study of trainers used in teaching the operation of a stitching machine clearly indicated that the rate of improvement of workers is directly related to the amount of instruction their trainers have received. Data such as these will go a long way toward selling the need of adequately trained instructors for rank-and-file jobs.

ATTITUDE STUDIES. Many are concerned with the attitudes of employees both toward the company and toward basic economic and political problems. Evidences of undesirable attitudes are found in lowered quantity and quality of production, absenteeism, general indifference toward work, and overt disregard for authority. Attitudes are not innate, but are a product of training.

Induction programs, employee meetings, radio programs, company newspapers, letters to employees, simplified statements of the company's financial transactions, and many other techniques are being used to modify and influence employee attitudes. These techniques are conceived usually by

MANUFACTURERS' BULLETINS

A REVIEW of the month's outstanding trade literature. Items are listed one month only—no repeats.

Free FOR THE ASKING

1. The Simplex machine made by Robert Reiner, Inc., the fabrics it can produce, and its construction features are all shown and described in a recent booklet.

2. The Leveltronic relay, an electronic-control unit designed for basic applications in the control of liquid level, interface pressure, and temperature is described in a catalog and price sheet available from R-S Products Corp.

3. Dustkop dust collectors in typical installations are illustrated and described in a bulletin #510 entitled "Put a Permanent Stop to Dusts" issued by Aget-Detroit Co. Collectors for dusts and lint from grinding, polishing, and buffing operations as well as vapor collectors to trap the mist and vapor from thread grinders and centerless grinders are included.

4. Cotton slashers and equipment made by West Point Foundry & Machine Co. are shown and described in a recent booklet. Two- and three-cylinder machines, three types of creels, single- and double-beam head ends, and other equipment are included.

5. A stock gear and reducer catalog has been issued by Ohio Gear Co. Sections on reducers, gears, chains, and sprockets and 120 pages of engineering data are included.

6. Permanent standard buildings fabricated from heavy rolled-steel sections, available in two design loads are shown and described in a booklet offered by Luria Engineering Corp.

7. Spinning calculations simplified and, in some cases, reduced to graph form are contained in a chapter of Vol. V, No. 12 of *Platt's Bulletin.*

8. "Taxes and Profit-Sharing Plans" is the title of a 16-page booklet available from Charles D. Spencer & Associates, Inc. It explains the U. S. Treasury-approved profit-sharing plans under which both employers and employees are accorded favorable income-tax treatment.

9. The application of fabricated plastics to industrial processes in the form of chutes, guards, housings, pulleys, etc. is described in a booklet available from Fabri-Form Co., fabricated-plastic engineers.

10. The new lockstitch machine of Union Special Machine Co., model 52800, with improved lubricating system is described in a recent issue of *The Needle's Eye.*

11. A free washroom-maintenance service to users of West Disinfecting Co. sanitation products is discussed in a booklet issued by the company.

12. Boiler feed pumps, their construction, selection, application, and performance are shown and described in a folder issued by Jacuzzi Bros., Inc.

13. The ball-bearing doffer-comb box with sealed bearings, which is made by Southern States Equipment Corp., is described in a recent folder.

14. Ballasts for fluorescent lamps, their construction, and application are described in a General Electric catalog covering all types.

15. "Selection and Use of Fatty Acids" is the title of a new Armour & Co. booklet. Many textile applications of the fatty acids are described.

16. A woolen ring-spinning frame made by Platt Bros. (Sales) Ltd. is described in a recent booklet. Construction features are fully described and illustrated.

17. Sixteen lines of attack on break-even points through reducing costs and increasing production are outlined in a brochure available from Remington Rand Inc.

18. Vision on the job—and what it means to yarn operations are discussed in a recent issue of *Bausch & Lomb Magazine.*

19. Materials-handling machines and special-handling attachments which make up the complete line of the Tructractor Div. of Clark Equipment Co. are shown and described in a new 40-page catalog.

20. Winding, cutting, folding, spooling, hot pressing, and fast-edging machines of Consolidated Sewing Machine & Supply Co., Inc., are shown and described in a folder of catalog sheets.

21. Temperature and pressure instruments for measurement and control, making up the complete line of Gotham Instrument Co., Inc., are described and shown in a new catalog. Structural features and application data are included.

MILL EXECUTIVES may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.

Instructions for use of post cards on either side

Write in box the number of item describing one catalog wanted. ☐

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McGraw-Hill Publishing Co., Inc.

22. Standard test methods for determining various properties of pyroxylin and thermoplastic vinyl-resin-coated fabrics are described in a booklet offered by Pyroxylin & Resin Coaters Institute.

23. Tables showing the properties of the most commonly used types of stainless steel, displayed for easy reference, are featured in a new bulletin describing John B. Astell Co. stainless-steel pipe, tubing, and fittings.

24. Savings in maintenance of machine elements by use of metallizing are described and shown pictorially in a recent issue of *Meteo News*, publication of Metallizing Engineering Co. Use of Sprabond, a new bonding metal which reduces metallizing from eight to three steps, is also discussed.

25. Bramwell feeders for any textile-blending requirement are shown and discussed in a folder available from Geo. S. Harwood & Son. Aprons, garnett feeds, and continuous feeds are also covered.

26. Electric-hygrometer equipment, which comprises the complete line of American Instrument Co. for exacting industrial and laboratory applications, is comprehensively described in a recent 28-page bulletin.

27. New life for worn roofs is discussed in maintenance guide published by the Stonhard Co. It explains that extra years of life for any type of roof can be obtained by careful inspection and timely treatment. Danger signs that lead to roof failure are described, and cut-away illustrations show the vulnerable points where special attention is most often required.

28. Use of Axiflo fans in high-temperature applications, stressing economy and versatility of performance, is described in a booklet offered by Westinghouse Electric Corp.

29. Large-diameter loom beams, their use and their effect on production, are discussed and shown in a folder available from West Point Foundry & Machine Co.

30. Motor controls, safety switches, service equipment, circuit breakers, panelboards, switchboards, and bus duct are described in detail in a profusely illustrated catalog issued by Federal Electric Products Co.

31. The electro-hydraulic tensile-strength tester of Thwing-Albert Instrument Co., and its operation, construction, and application details are described in a 16-page booklet.

32. Visual production control by use of the motor-driven Chart-O-Matic control chart is described in a folder issued by Spiral Mfg. Co.

33. An inventory of machinery and equipment can be made on blank forms supplied in a booklet "Your Machinery and Its Actual Cash Value," offered by Hartford Life Insurance Co.

34. A flat-press finishing machine for cotton, rayon, and other fabrics is shown and described in a folder issued by F. Hattersley Pickard & Co.

35. Mercury-vapor lamps in 16 types are described in a booklet announced by Lamp Div., Westinghouse Electric Corp. Technical data, operating characteristics, lamp construction, and maintenance are covered.

36. Swiss stop watches which feature a non-breakable, coil-spring mechanism said to reduce the possibility of breakage and wearing out, and available in several types, are described in bulletin 576 offered by Herman H. Sticht Co., Inc.

37. Twisters made by H & B American Machine Co., and their construction features, are shown and described in a folder offered by the company.

38. Engineering and construction of new buildings performed under a single contract by John J. Harte Co. is discussed in a recent booklet. Advantages of "one contract—one responsibility—one profit" are pointed out.

39. Engineering data on selection of cast-bronze-bearing alloys are included in a booklet issued by Bunting Brass & Bronze Co. Physical-property data, characteristics, and typical uses for each alloy are covered.

40. Mechanical rubber products and special items for industrial use are described in a condensed catalog offered by Manhattan Rubber Div., Raybestos-Manhattan, Inc.

41. Instantaneous modulus of elasticity of textile materials under static and dynamic conditions as determined by the pulse propagation meter is discussed in a folder issued by Magnetic Amplifier Corp.

42. Battery-powered hand trucks made by Yale & Towne Mfg. Co., the "Worksaver" line, are completely described and shown in a new bulletin. Operating mechanisms are described and shown in detail.

43. "Allowable Working Pressures" is the title of a booklet for designers, fabricators, and users of industrial-piping systems issued by Tube Turns, Inc.

44. Two new hosiery mills designed and engineered by Lockwood Greene Engineers, Inc., are described in a recent booklet. Covered are many new trends in mill construction.

45. A new color selector for industrial maintenance finishes has been issued by Oliver Johnson & Co., Inc., Featured are the company's new Rest-I-Form one-coat Hi-Hide wall paints, as well as identification paints which meet standard regulations; also machinery, dado, and floor enamels.

46. Three surface-active agents cationic and non-ionic, which have uses as wetting agents, detergents, emulsifiers, emulsion breakers, and chemical intermediates are described in a booklet available from Armour & Co.

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1. Fill out completely *one space* (name, title, company, address, and item number) *for each* bulletin wanted. Put only one number in each square.

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Memo on Modernization

ANOTHER GREAT TEXTILE PLANT SPECIFIES HUNTER EQUIPMENT

When one of the largest and most successful worsted mills in the country embarked on its program of installing new and high speed wet finishing, drying and carbonizing equipment, it also specified Hunter, because:

(a) The Hunter Continuous Washer, shown installed, enables this mill to scour cloth continuously at rates from 40 to 50 yards per minute at tremendous savings in labor, water, soap and power.

(b) The Hunter Uniflow Tenter Dryer, also shown installed, dries this plant's 12 ounce worsteds at rates up to 60 yards per minute, with one man's labor as a machine operator.

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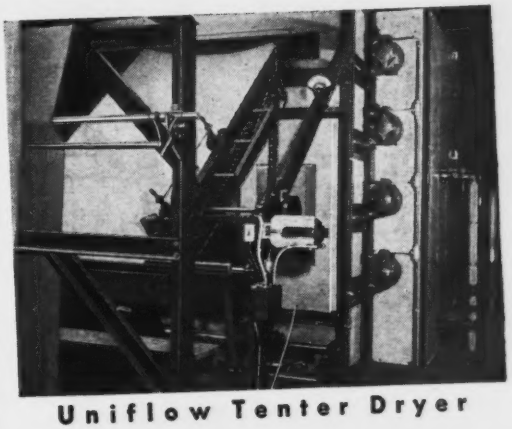
If you are contemplating machine replacement or expansion in preparation, wet finishing, dyeing, drying or carbonizing equipment, we invite you to write for catalogs with more details, or we will be glad to have a competent engineer call. — Write.

Memo on Modernization

Continuous Carbonizing Range



Uniflow Tenter Dryer

Continuous Washer Line

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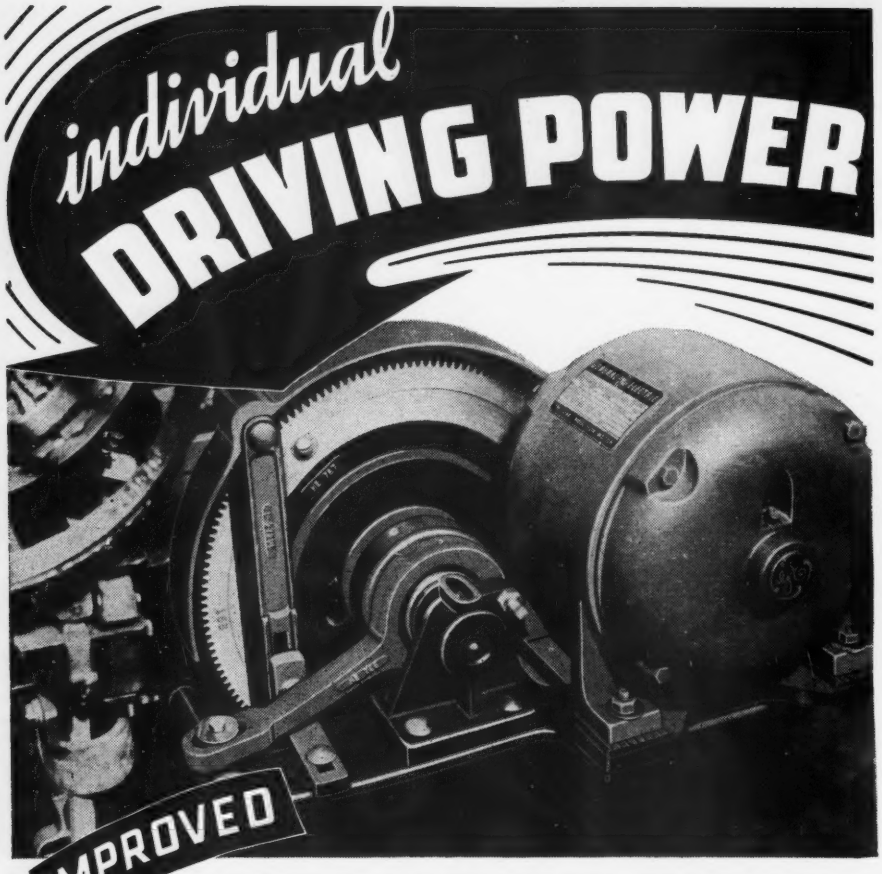

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Flywheel with removable ring gear is precision machined, and balanced in Hunt Individual Motor Drive. Absorbs intermittent shock of pick and lay motions.

Direct attachment to loom side integrates motor with loom; eliminates crankshaft strain. Ball thrust bearings save power, reduce friction, keep gears and crank arms in alignment.

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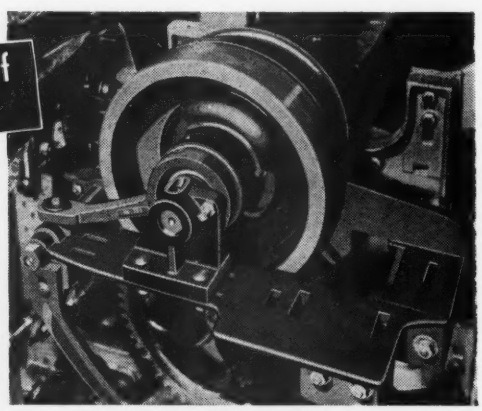

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Particularly efficient when installed with patented Hunt Spreaders on older model looms. Starts from any position. Replaces "tight-and-loose" pulley drives. Flywheel interchangeable with Hunt Individual Motor Drive.

Write us for help with problems of individual or belt-driven loom drives.

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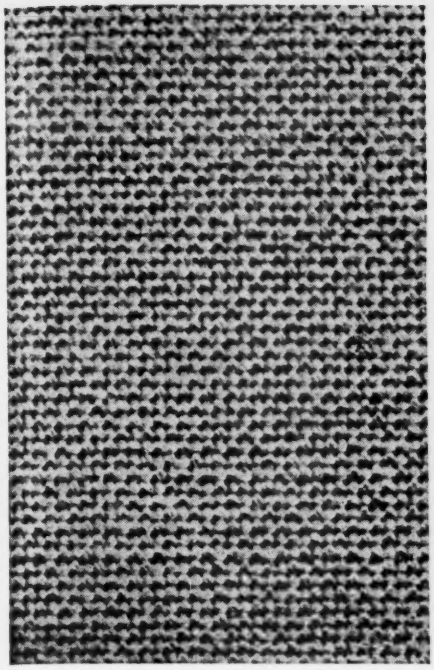
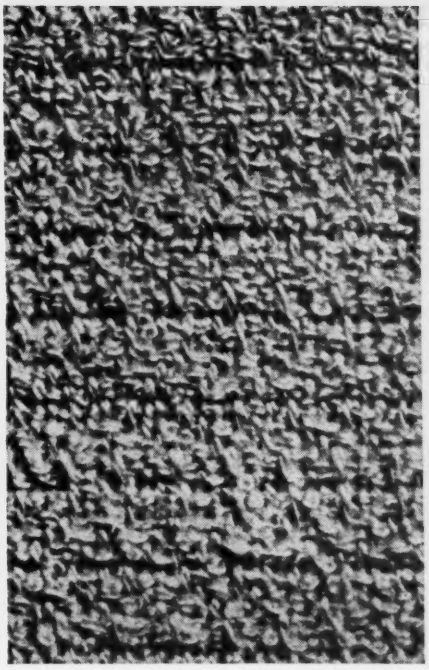
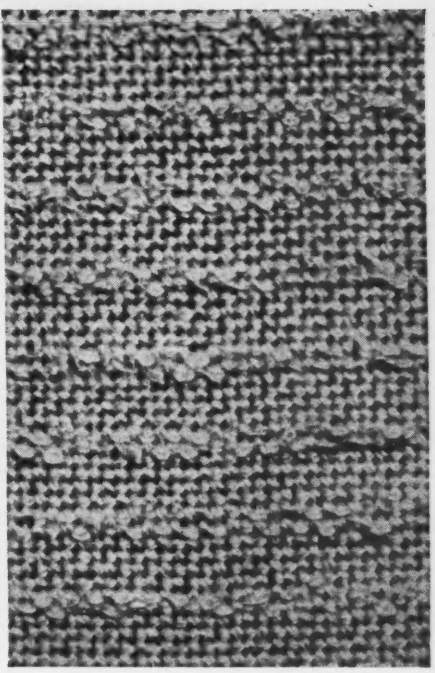
individuals who, try as they might, cannot have in full the point of view of the rank-and-file worker. Here again indications of the effectiveness of these methods must be sought through a research approach. Each time one attempts some form of attitude modification, efforts should be made to measure as accurately as possible the results. Many techniques are available, with opinion polls being perhaps the most popular and, in some ways, the easiest to use and misuse. "Canned" opinion polls rarely achieve the results desired because they usually do not get to the heart of a problem. Opinion polls should be tailored to get specific answers as to the effect of a specific effort on the part of management to modify employees' attitudes if one is to get value received from the use of research.

The area of supervisory training also requires careful and thorough investigation. Supervisory training costs money in terms of personnel involved even if done efficiently; it costs even more when done ineffectively. Certainly the starting point of any supervisory training program is determining needs; not just general needs, but the needs of the specific supervisors involved. So-called packaged or canned plans of training, usually brought in from the outside, rarely meet the needs of the supervisors in a specific mill or plant. One obvious way of getting at training needs is the much-misused questionnaire technique. This method should be supplemented with a careful study of duties required of our supervisors and the study of specific conditions, such as the use of formal warnings, which indicated training needs. Do not plan to make one survey of training needs at this level and stop; plan to study constantly needs and revise the program accordingly.

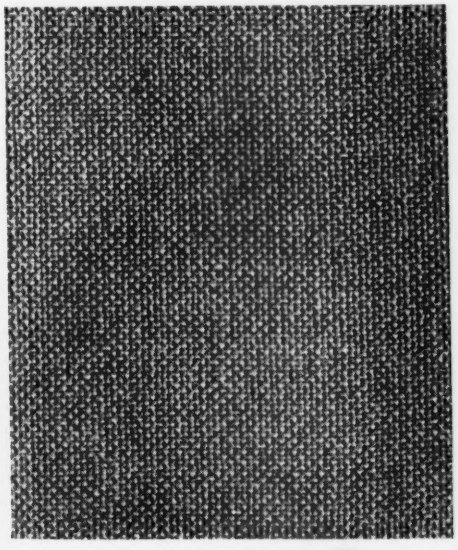
SUPERVISORY TRAINING. What of the methods used in supervisory training? There are numerous arguments for the advantage of the conference method in training supervisors. It has its disadvantages also, particularly from a time-consumption viewpoint. One advantage claimed for it is that supervisors react more favorably to it than to other methods; but a survey showed that supervisors were not unanimous in agreeing that it was the most desirable method of instruction. In fact, as many prefer other methods, such as the lecture and lecture-discussion. This indicates the need for a research approach to this problem. Certainly matched groups of supervisors, taught the same topic by different methods with outcomes carefully evaluated, would give dependable information on which to plan supervisory-training techniques.







Preferred by home-makers... drapery and upholstery fabrics made with Lanese* synthetic fiber



These home furnishing fabrics are typical of the wide variety of weaves and textures available through the use of Lanese . . . light or heavy home-spun constructions . . . textured surfaces . . . ratiné fabrics of luxurious weight and deep texture. Despite their weight and regardless of the area over which these fabrics are hung, they possess excellent dimensional stability. Tests in use have shown that the length they are hemmed is the length they remain, for they stay true to size despite wear or cleaning. Furthermore, fabrics of Lanese can be designed for sound control, breaking up or absorbing sound waves. They provide excellent light control, blocking sun glare, yet permitting the passage of light. And because they can be constructed with dimensional stability, fabrics of Lanese can be used to partition modern spacious rooms.

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May McEwen Kaiser

(*Continued from page 133*)

A new addition to workers' welfare is a beneficial visual service, by which eyes are examined through a Bausch & Lomb Ortho-Rater. Karl Benson, 14 yr. with the company, was sent to Purdue University for training in the operation of the new instrument. The program at the company's mills was completed by Purdue University in cooperation with the American Medical Association, the American Optometric Association, and by trained engineers of Bausch & Lomb. Vision ratings at distance and nearby, depth perception, color discrimination, and measurement of lateral and vertical displacement of images in both eyes are checked. Annual tests are given free, and those in need of attention are referred to professional eye-men.

Personal interest of officials in the workers and their families becomes obvious in a tour through the plants with an official. Frequently, he is greeted by his first name. In all cases, the attitude of official and worker is warm and friendly. The efficient superintendent of one mill is called "Darling."

WELL-RUN NEWSPAPER. Probably one of the most efficient helps in the friendly feeling in these mills is the employees' newspaper edited by attractive, hard-working Emily Joyner under Mr. Bourdelat's direction. The periodical is called the *Cameo Reporter*, a name selected by Silas Barrett, a knitter, who won a $25 bond for his suggestion. It runs four pages, 12x16 in., and is delivered to each employee every three weeks. Well illustrated with pictures of employees, their babies, and families, and officials, it carries stories of individuals' work in the mills, always with a pat on the back.

The columns of correspondence from each plant seem the nub of the paper's appeal. They give news comment on little things, and the items are as interesting to the reader as the news in a county weekly. They report that the mighty pretty engagement ring Nina Garrison is wearing is the gift of Johnny Baker; that Maggie Pruitt and her husband have solved their housing problem by buying a trailer and living in her mother's back yard; and they sometimes ask intriguing questions, such as who was picking blackberries with Shorty Rudd? Down-to-earth stuff, these columns bring neighborly gossip, smiles, tears, and sometimes a laugh. Each year the correspondents are given a banquet.

The general well-being of employees at the May McEwen Kaiser plants is

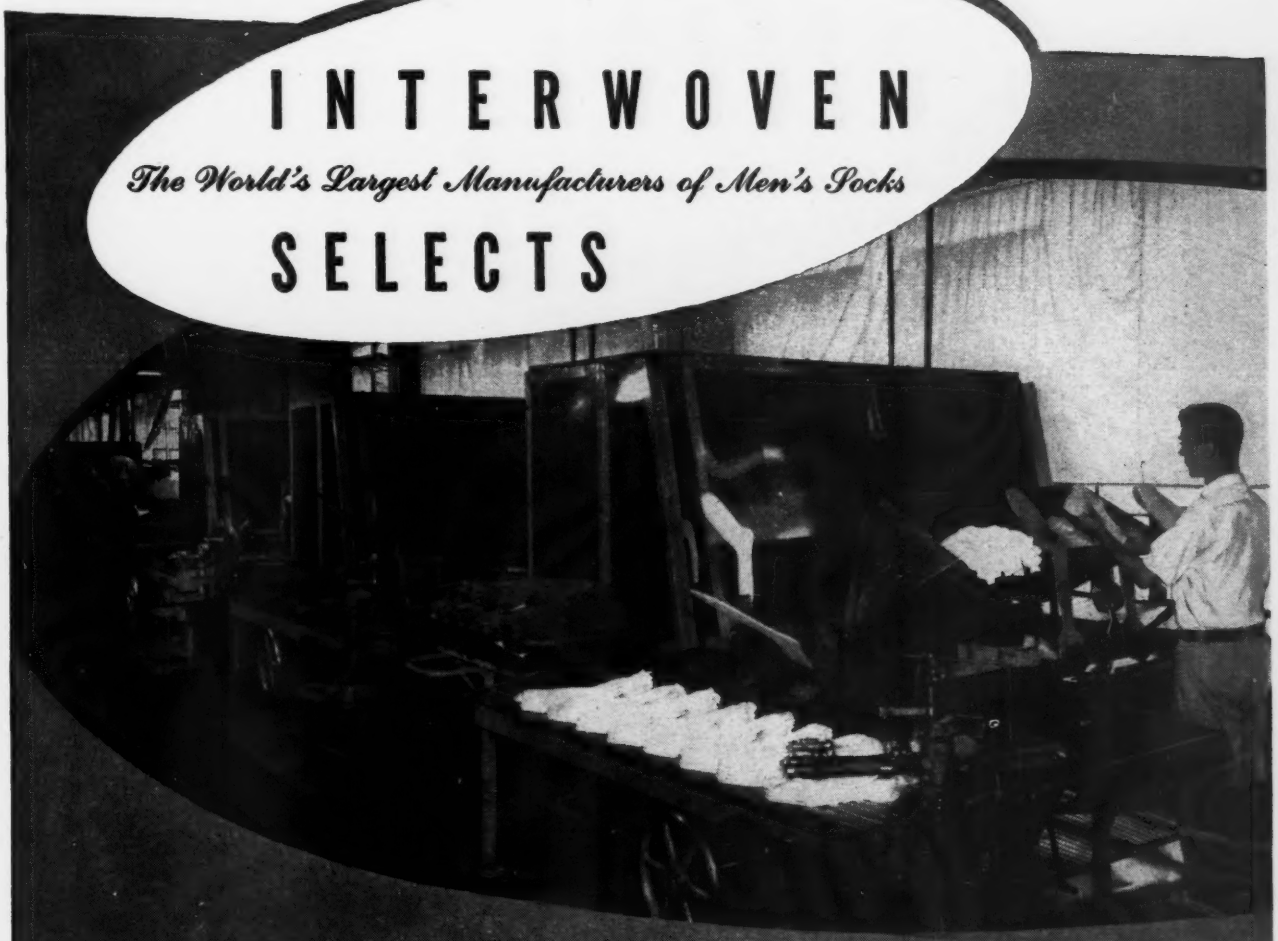
For finishing

THE LATEST MEN'S HOSE

INTERWOVEN

The World's Largest Manufacturers of Men's Socks

SELECTS



PROCTOR BOARDING EQUIPMENT

Finishing men's hosiery may not seem as glamorous as putting the final touches to sheer women's nylons—but to the producer of men's hose—it is equally important. Boarding is the operation that puts on that final touch and adds so much to the eye appeal; that's why it must be done properly. To achieve the results they desire in finishing their socks—Interwoven Stocking Co. of Martinsburg, W. Va. depend entirely on Proctor automatic boarding machines. As a matter of fact, the three machines shown had been in operation only about six weeks when this photo was taken this summer. These three new Proctor automatic boarding machines bring their installation to a total of 60. If you are engaged in the production of men's socks—you owe it to yourself to investigate this Proctor machine today. Write for details.

Proctor & Schwartz, Inc.

PHILADELPHIA 20, PA.

Yarns Dyed by

By eighty-two years of dependable yarn dyeing service to many exacting customers, Globe has given quality significance to the label—*"Yarn dyed by Globe."*

Ample modern equipment for all types of yarn dyeing and a smoothly functioning organization make good our slogan—*"You can Rely on Globe"*

We do package dyeing on tubes, skein and warp dyeing, and warp mercerizing.

Yarns we process include cotton, rayon, nylon, worsted, linen, blend and novelty yarns.

GLOBE DYE WORKS CO.

4500 WORTH ST., Philadelphia 24, Pa.

evidence that the friendship plan has paid dividends. Friendship among them seems real and important.

The company was founded by James Henry McEwen, former principal of the Burlington High School. Following service in the Navy in World War I, he became superintendent of Star Hosiery Mill in Spartanburg, S. C.; then he became secretary-treasurer of Charlotte Knitting Co. In 1925, he was one of the organizers of McEwen Knitting Co., which merged with May Hosiery Mills in 1940. Mr. McEwen died Oct. 8, 1946.

Officers now are Herbert M. Kaiser, New York, president; Joseph P. Kelly, vice president; R. M. Holt, secretary-treasurer; C. B. Faircloth, assistant-secretary-treasurer; and George P. Bourdelat, personnel director.

Air Conditioning

(*Continued from page* 119)

locity through filters has to be very low, not higher than 150 fpm., but preferably only 100 fpm.

Operating experience has shown that filtering the air of this zone is a very serious problem and that further tests are necessary to reach a definite solution, the first of which will be to humidify the air before entering the filter bank. However, the installation of this zone in the La Hidrofila plant shows a very marked advance in the solution of this particular problem, as no other plant in the Argentine has in its carding room an atmosphere which could be compared with this. A breathing mask has been a standard equipment for operators of carding rooms; but in the Hidrofila plant, operators removed these masks as absolutely unnecessary. With the present logical and very justified tendency to provide better working conditions for operators, this fact has great significance.

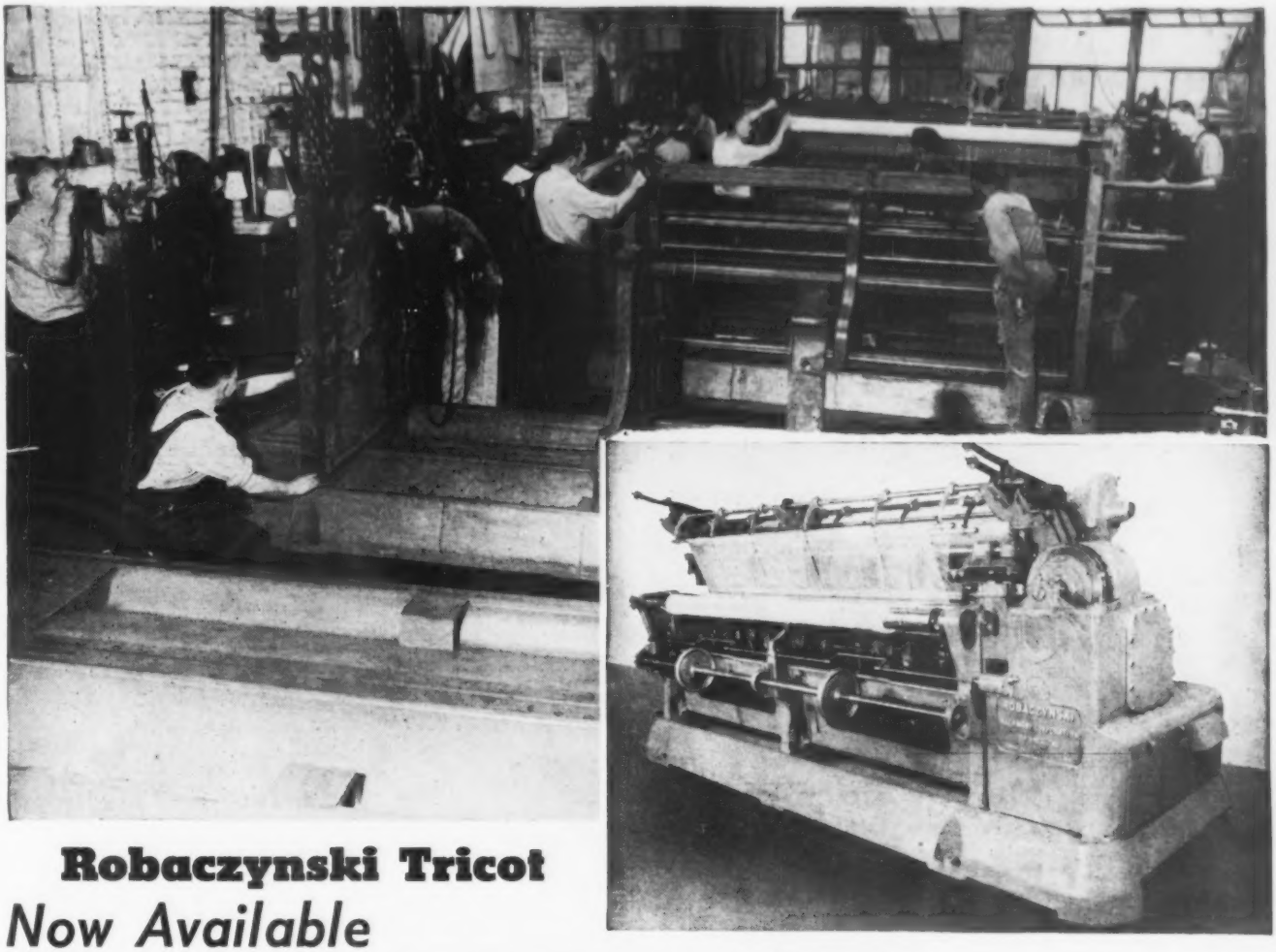
No humidifying for the carding zone has been provided; although based on the experience gained, it is believed that humidification up to 50 or 55% would be convenient because it would help to solve the problem of air filtering, beside reducing the dry-bulb temperature in the room.

In the photograph of the carding room, the supply grilles are plainly visible, and there are similar grilles at the other end of the room. The return grilles on the side walls are covered by the machines and are therefore, not visible.

SPINNING, WEAVING. The spinning zone consists of the spinning room itself and several other rooms for other machinery. Originally, the spinning room had been designed for a maxi-

Tested and Approved!

Designed to produce better fabric faster



Robaczynski Tricot

Now Available

Back of this new model tricot lies a lifetime of experience in the manufacture of knitting machines, with a thorough knowledge of what you want in your tricot of tomorrow—the 1948 Robaczynski Tricot.

Every detail of design and construction has been worked out to give you better quality and quantity of fabric with a long and carefree life for the machine.

Nor have we overlooked the operator. On our tricot he stands in a natural position with all parts easily accessible, all adjustments on the front of the machine with indicators to save his time running around behind it.

Seeing is believing so we hope every interested knitter of tricot fabrics will find it possible to visit our plant and see it operating under commercial conditions.

Features

Fabric widths 90"—168"—180".

Massive foundations to minimize vibration.

All adjustments—cam, stitch, truck are made from front of machine.

Equipped with variable speed drive.

Let off tensions so designed and sensitive they practically eliminate whipping of threads and the use of slay points.

Cloth takeup so constructed it needs no attention once it is adjusted.

Equipped throughout with antifriction bearings.

All driving mechanism, including motor, totally enclosed.

All parts easily accessible.

WE ALSO MANUFACTURE

Raschel Type Warp Knitter

Purl Stitch or link knitting machines. Hand or power operation.

V type flat knitting machine, hand or power operation.

Twin head Border machines.

Tubular band machines.

Send for complete information.

ROBACZYNSKI MACHINE CORPORATION

PURL STITCH Links and Links and FLAT KNITTING MACHINES

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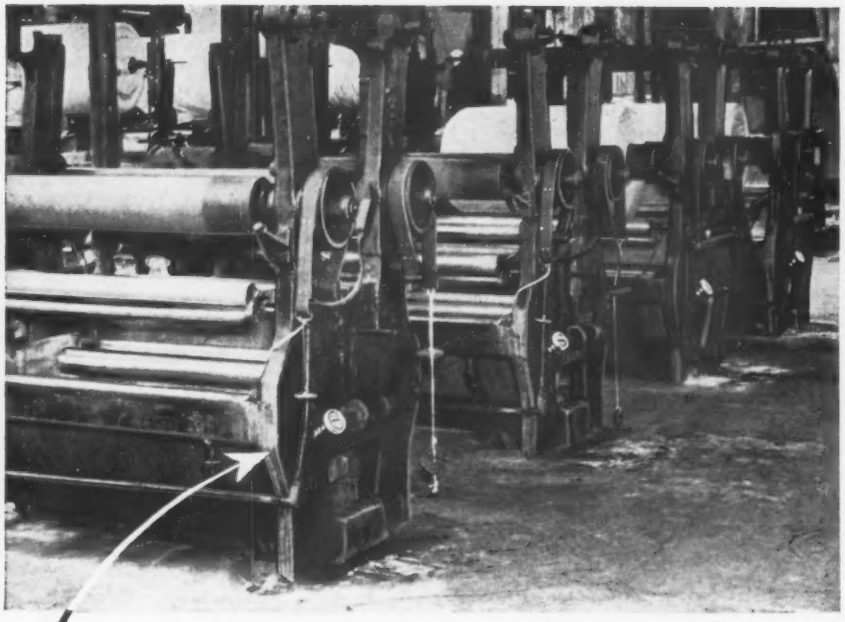

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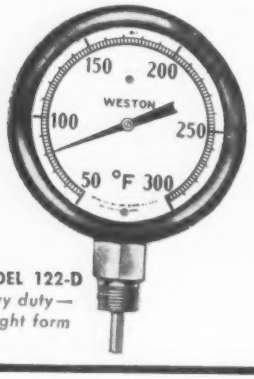
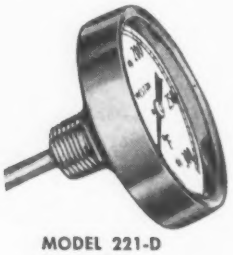
Combine all the advantages which insure overall efficiency . . . *quick, easy installation—readable, dial type scales—rugged all-metal construction—long-time accuracy—lower replacement and maintenance costs.* Ideal for tanks, vats and all other textile equipment. Available in required sizes, ranges and stem lengths. See your jobber or local WESTON representative . . . WESTON Electrical Instrument Corporation, 689 Frelinghuysen Avenue, Newark 5, New Jersey.



MODEL 122-D
heavy duty—straight form



MODEL 221-D
3" head dia.

mum of 75% r.h. under summer conditions, and a somewhat lower humidity of about 65% had been projected for the other rooms. According to latest tendencies, however, only about 70% r.h. is maintained now in the spinning room and about 60% in the other rooms of this zone, as these conditions are considered most suitable. The different humidities are obtained without difficulty by supplying the corresponding volume of air to each room of this zone.

The principal room of this zone, the spinning room, is about 140 ft. long by 125 ft. wide, with a shed-type roof, a minimum height of 16 ft., and maximum height of 29 ft. Great care has been taken to provide sufficient thermal insulation for the roof in all zones; and with this in mind, the 4-in. concrete roof has been covered with ⅜-in. corrugated asbestos sheets on the outside and with Celotex-type insulating board ½-in. thick on the inside, with air spaces on both sides of the concrete. In this way, the solar-heat load through the roof has been reduced to approximately 18% of the total sensible heat load in the spinning mill and to approximately 17% in the weaving mill.

As the internal heat load is already very high—48 B.t.u./hr./sq.ft. in the principal spinning room, about 34 B.t.u./hr./sq.ft. in the other rooms of the spinning zone, and 24 B.t.u./hr./sq.ft. in the weaving room—and also because of the high relative humidities to be maintained, it has been thought advisable to reduce as much as possible the exterior sensible heat gains, both transmission and solar.

The weaving zone consists of one single room 395 ft. long by 105 ft. wide with a similar roof construction. The equipment is able to maintain 75% relative humidity under design summer conditions, but is able to reach humidities as high as 80% and above most of the time. It is now operated at these high humidities to entire satisfaction.

The air-conditioning equipment serving the spinning and weaving mill has been located in two neighboring basements. The equipment of both zones is identical, differing only in the number and capacity of the fans. Six centrifugal blowers with a capacity of 32,000 cfm. each supply air to the weaving room, while the spinning room is served by four similar blowers of 38,000 cfm. each. All blowers are driven by totally enclosed and fan-cooled 15-hp. motors. The two zones are completely separated.

The fans discharge the conditioned air into underground ducts, which because of their size, resemble more an ample-size passage than an air duct. All ducts are of brickwork either un-

BRINTON
MAXIMUM FEED R. B.
RIB BODY
MACHINE
This very modern production machine with individual motor drive, free wheeling, improved large capacity take-up reel and extra feeds is the latest contribution by BRINTON to progressive underwear manufacturers. Built in sizes from 8" to 26" diameter, from 8 to 26 feeds. Plain or automatic 1x1 and 2x2, for a great variety of stitch combinations.
This Trademark on your machine represents more than half a century of experience.
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● By the very nature of their service, check valves *must be* dependable. That Lunkenheimer Check Valves provide this service is proved by innumerable installations, in plants large and small.

Let's consider, for example, the Lunkenheimer Swing Check Valve. Among other features, every Lunkenheimer Swing Check Valve is equipped with *two* renewable side plugs. Normal carrier pin wear can be compensated for easily. Recognized by leading valve users as remarkably trouble-free, Lunkenheimer Check Valves provide positive reverse-flow protection over a much longer, lower-cost service life.

Your Lunkenheimer Distributor has a stock of Check Valves for your needs. Call on him for your original equipment, replacement, and repair valve requirements.

. . . More than 96 types of LUNKENHEIMER *Check Valves*

Available in sizes and materials to meet every service requirement.

From small Bronze 125 lb. S.P. to massive steel patterns for pressures up to 2500 lb. S.P.

Lunkenheimer Check Valves are described and illustrated in Circular Number 588. Ask your Distributor for a copy or write direct.

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derground or built within the building structure; and there are no air ducts within the conditioned rooms, as may be seen in the pictures. It may be appreciated that both spinning and weaving rooms have a great number of supply grilles on their long sides. Directional-type grilles provided with individual horizontal and vertical regulation of the vanes have been used because of the high face velocities required by long air throws (70 ft. in the spinning room and 52½ ft. in the weaving room). These grilles assure uniform air distribution without having any suspended supply duct within the rooms, avoiding all inconveniences originated by these ducts, such as ugly appearance, reduced natural lighting, difficult cleaning, and—last but not least—high cost.

The return ducts are placed underground in the center of the rooms, with floor-type return grilles, opening directly into the main return ducts. All ducts have, of course, good access facilities for cleaning.

The return air enters the conditioning room through the special return-air filters pictured. It has been found necessary to maintain a very low velocity, not more than 150 to 200 fpm., in order to avoid too frequent filter cleaning.

Experience has shown that with low velocity, the lint is more apt to stay on the entering surface of the filter, from which it is easily removed, as it forms a mat. Even so, it is necessary to disassemble filters periodically for thorough cleaning.

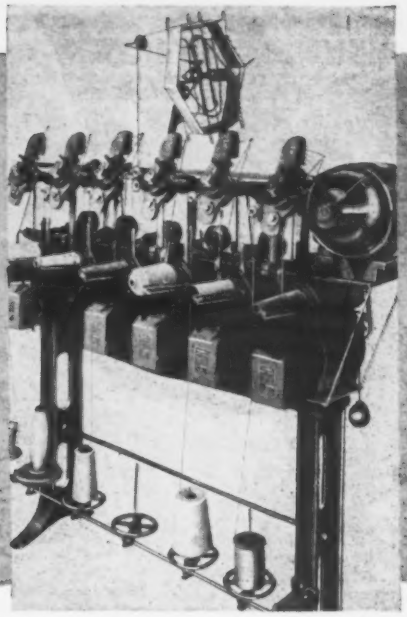
After passing the filters, the return air is mixed with the fresh air and passes through heater or by-pass, reaching later the humidifying banks where, beside being humidified, it is filtered again. The conditioned air is then delivered to the conditioned spaces.

All windows of the conditioned spaces are permanently closed; and it has been necessary to provide some means for the air to escape, especially as in summer the equipment operates with 100% fresh air. For this reason, the main return duct is connected to an ample-size vertical exhaust chimney.

Because of the pressure which the great volume supplied is creating in a practically airtight room, the room air enters the return duct and is expelled through the vertical exhaust chimney. Regulating dampers open up the entrance to the exhaust duct simultaneously when the return dampers leading to the conditioning equipment are closing. One of the photographs gives an idea of the size of the air ducts involved.

All dampers are operated by damper motors, controlled in part by thermostats and in part manually from a cen-

Put a stop to winding troubles with the *Kidde* TENSION CONTROL



Just put the *Kidde* Tension Control on your Universal 50's—and your winding troubles will practically disappear! For instance:

In dye package winding, Kidde Control maintains uniform low tension throughout each package, even as low as 1 gram. Yarn is fed to the package rather than drawn. Result: more uniform colors, particularly on acetate rayon, nylon, synthetic filament yarns. Shiners are eliminated... breakage reduced in rewinding from dye package to cone.

On rubber and elastic yarns, Kidde Tension Control holds stretch as low as 10% on the cone . . . winds from skein to cone in one operation . . . reduces yarn breakage, frequently speeds up production.

Kidde LOW-FRICTION Roller Bail

This *Kidde* device, running on super-precision ball bearings as accurate as those used on the finest machine tool spindles, assures lowest running friction and highest standards of performance. Supplied as part of the *Kidde* Tension Control, it decreases tension build-up on packages . . . results in less smear, fewer cobwebs. May also be used alone wherever a low-friction bail is needed.

MAIL COUPON FOR DETAILS

Walter Kidde & Company, Inc.,
491 Main Street, Belleville 9, N. J.

Gentlemen:

Please send me full information on the *Kidde* Tension Control and Low-Friction Roller Bail.

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POSITION .....

COMPANY .....

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WALTER KIDDE & COMPANY, INC. 491 MAIN STREET, BELLEVILLE 9, N. J.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

FIRE EXTINGUISHING EQUIPMENT
FIRE DETECTION DEVICES
HIGH-PRESSURE CONTAINERS

Kidde
MANUFACTURING ENGINEERS

VALVES, CYLINDERS, SPHERES
TEXTILE MACHINERY
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These durable, precision-built Casters assure the easy handling of heavy loads. Savings in floor and equipment wear soon pay for their cost. Ask your supplies dealer about Darnell products.

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DARNELL

CASTERS & E-Z ROLL WHEELS

tral control panel. All electric equipment is controlled from this panel—the fan and pump motors as well as the automatic-control equipment, which, besides the damper motors, includes motorized valves for all heaters and a master valve for the steam supply line, as well as hygrostats to control the relative humidity.

From this control panel, the operator is not only able to operate every motor and control, but since every switch has a pilot light, he is able to tell at sight which motors and controls are operating at the moment and also, from the different colors of pilot lights, which fan is selected to operate automatically and which to operate manually.

The controls are really divided in three panels (*tejeduria*, weaving; *hilanderia*, spinning; *cardas*, carding). It is also planned that electronic recording equipment should be installed soon to have an exact and automatic control of temperatures and humidities. To accomplish this, the recording equipment will record dry-bulb and wet-bulb temperatures of all zones and also of the outside air.

The cost of this equipment, sold in December, 1944, converted to U.S.A. dollars, has been an average of $820.00 per 1,000 sq.ft. of conditioned surface. This price includes all erection work, but excludes building-construction work such as construction of basements, ducts, and other complementary costs, which amounted to as high as about $600.00 per 1,000 sq.ft. of conditioned surface. Related to the volume of air handled, the average cost has been $163.00 per 1,000 cfm. for the evaporative-cooling equipment and about $120.00 per 1,000 cfm. for the complementary expenses. On the other hand, the efficiency of this new textile mill is very high and uniform the year round; and, furthermore, operators are highly satisfied with working conditions, while in unconditioned mills managements are getting always more and pressing protests to establish better working conditions.

This plant has been operating since June, 1946; and it has been possible to observe the equipment in year-round conditions. The results have been highly satisfactory. The plant aroused such interest in the local textile industry that it is used as a model for a number of similar plants which are now under construction.

Bleaching Methods

(*Continued from page 139*)

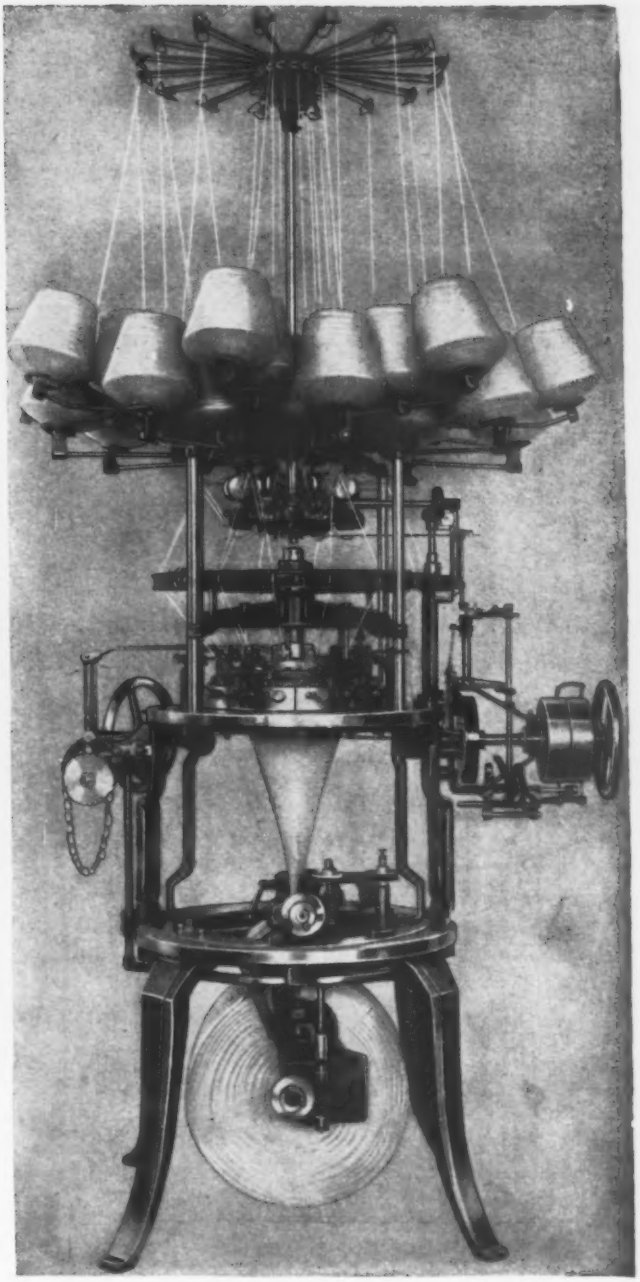
production of a certain harshness which causes the fibers to cling together without slipping over each other. While breaking strength measurements on a number of samples

WHY NOT HAVE?

more, smarter STYLES really uniform SIZES

and

DOUBLE PRODUCTION on all Knitted Garments



Yes! Why not have these valuable advantages when you get them all in one package with a

WILDMAN

Multiple-Feed RIB MACHINE

Style opportunities multiplied in this famous machine which features 16 or more feeds and takes no more floor space than your old 8-feeder now occupies while it doubles production or better.

Garment sizes are absolutely stabilized because this machine feeds the yarn under uniformly even tension. Another feature:—you tie cone to cone without stopping the machine.

Many other things we'd like to tell you about these machines. May we?

WILDMAN MFG. CO., Norristown, Pa.

STAR SILICATE STABILITY FOR HIGHER BLEACHING "MILEAGE"

Interested to bleach more goods per pound of peroxide? Star Silicate as your bleaching assistant saves peroxide and is four ways better.

Star is brilliantly clear—no floc to speed up peroxide decomposition.

Star's reserve alkali adds longer working life to bleach solution.

Star is stable to dilution and to heat; it does not decompose.

Star is especially purified to remove harmful iron and titanium.

These advantages apply equally to batch or continuous bleaching. Write now for free descriptive bulletin #17-8.

PHILADELPHIA QUARTZ CO., Dept. A, 127 S. Third St., Phila. 6, Pa.

PQ SILICATES OF SODA star BRAND

ANDREW K. HENRY

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RAYON TOPMAKER
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158 SUMMER STREET
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from a single process usually indicate those damaged by faulty control, they may be very misleading when used as a measure of slight degradation in the selection of a suitable process or class of processes.

The fluidity (or viscosity) of solutions of cellulose in cuprammonium hydroxide, because it is dependent upon the characteristics of the cellulose molecule itself, is a very good measure of cellulose degradation. Average fluidity values were increased 0.77 rhes by the peroxide kier bleaches, 1.21 rhes by the continuous peroxide bleaches, and 3.80 rhes by the hypochlorite bleaches. In no case were the fluidity values excessive. The hypochlorite bleach, however, as judged by fluidity values, damaged the fibers nearly five times as much as the peroxide kier bleach and over three times as much as the continuous peroxide bleach. Even so, fabrics from the hypochlorite bleach were of excellent commercial quality.

Desizing treatments degraded the fabrics slightly and increased the moisture contents and the apparent amounts of alcohol-soluble materials and waxes in the fabrics. High wax content was associated with the use of hard water and faulty washing procedures. Conversely, soft water and efficient washing procedures were responsible for removal of all but a small part of the wax.

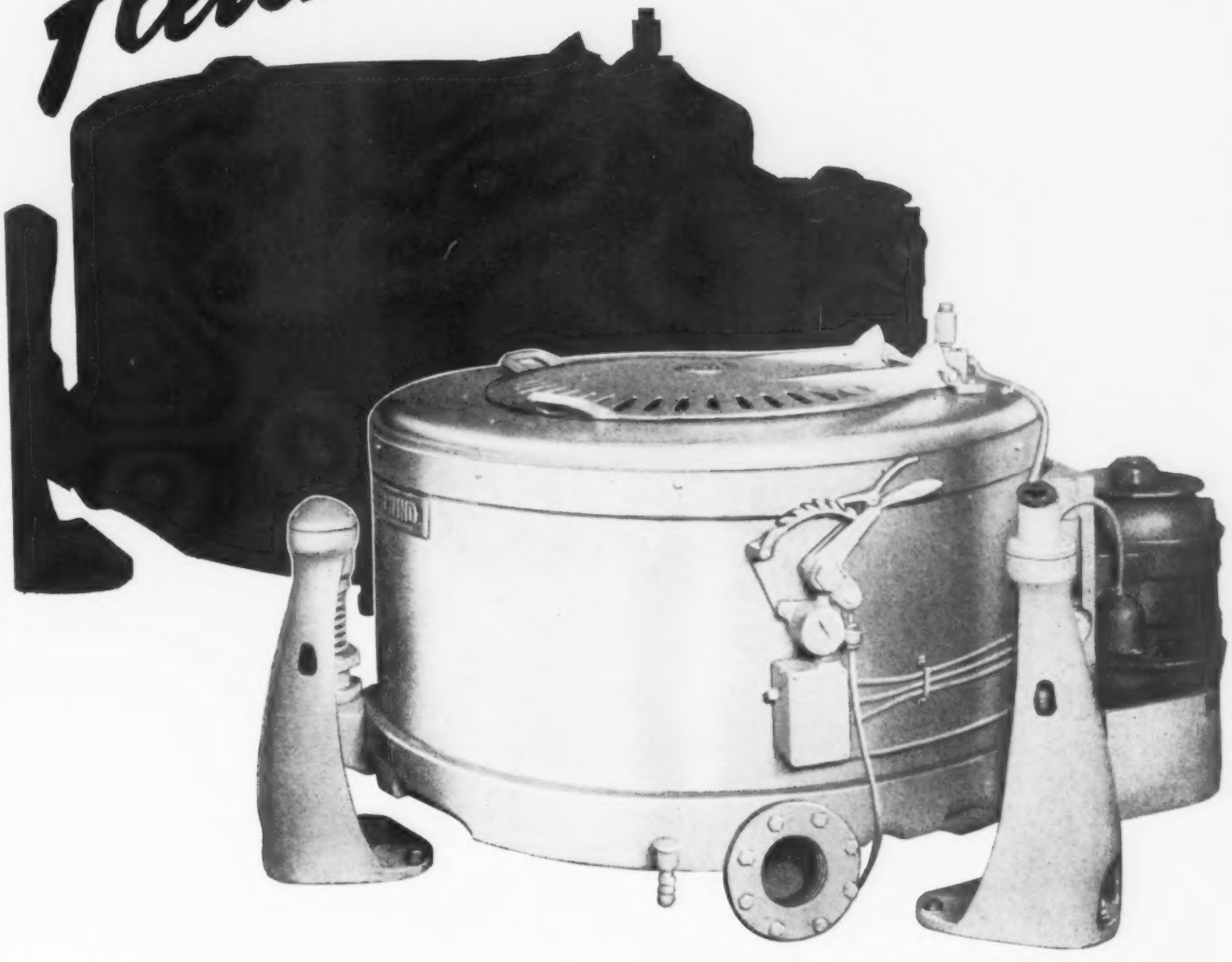
Reflectance, or whiteness, measurements revealed no differences in the three types of processes. The slight fluctuations in the recorded values were within the limits of precision of the measurements and were too small for visual detection. Likewise, absorbability, or measurement of the amount of liquid absorbed, revealed no differences between the three classes of bleaching methods.

METHODS OF EVALUATION. Kier boiling and bleaching of cotton fabrics have three main purposes: (1) removal of non-cellulose constituents, (2) production of satisfactory whiteness, and (3) attainment of satisfactory absorbency, all with minimum damage to the fabrics. The fabrics from the 11 bleaching processes were therefore evaluated by the following analytical measures of known accuracy and precision:

The alcohol solubilities were the extractives from 6-hr. Soxhlet extractions with hot (above 60° C.) 95% ethyl alcohol. The samples were dried to constant weight in tared beakers. (Recent work in the Southern Regional Research Laboratory has shown that isopropyl alcohol can be substituted for ethyl alcohol in this determination without altering the results.)

Wax was the chloroform-soluble

Fletcher WHIRLWIND EXTRACTORS



Fletcher WHIRLWIND — the only extractor with automatic hydraulic brake and "finger tip" control — is the most modern type of high-speed extractor. It has large capacity, unusual self-balancing, all-around performance, ready accessibility around the basket and requires no heavy foundation. Its ruggedness and dependability are recognized throughout the trade.

For smooth, safe stops; increased production; and fast, thorough extraction . . . investigate the Fletcher WHIRLWIND. Write for bulletin . . . engineering consultation available without obligation.

FLETCHER WORKS

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● From the time the motor is started until the power is cut off, you can be certain of dependable driven-machine performance, day after day, with the Rockwood Pivoted Motor Drive. It automatically assures just the right amount of pull . . . just the right speed . . . regardless of belt-stretch or load-changes. That's why you can count on Rockwood for all these advantages:

CUTS OPERATING COSTS—Eliminates belt slippage, usually doubles belt-life, saves 5 to 10% in power, reduces bearing wear to a minimum!

UPS PRODUCTION—Operates continually up-to-speed . . . no slow-downs or time-outs for adjustments!

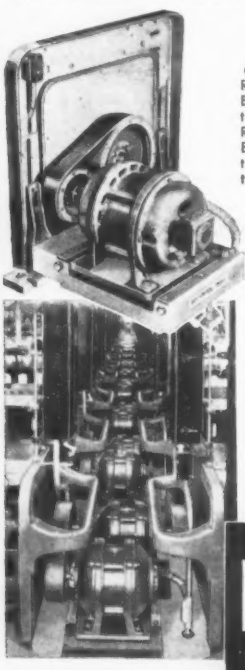
BOOSTS QUALITY—Maintains constant driven-machine speed at all times.

REDUCES MAINTENANCE—Holds correct tension with practically no attention. No adjustment needed . . . motor-bearing overhauls practically unnecessary.

Rockwood Pivoted Motor Bases give you better quality at lower cost . . . are easily and quickly installed. Write us for further details, or call your Rockwood distributor today!

ROCKWOOD MANUFACTURING COMPANY
Indianapolis, Indiana

Rockwood's expanded manufacturing facilities now assure delivery immediately, or on any delivery schedule you determine.



● **Top of page**—Rockwood Floor-Type Base for spinning and twister frames. **Left**—Rockwood Shelf-Type Base for spinning and twister frames. Fastens to frame-end.

●

View of Rockwood pivoted motor bases installed in a leading southern mill. Note the compactness of arrangement possible with these Rockwood drives.

AVAILABLE *with Flat or V-Belt Drive*

ROCKWOOD PIVOTED MOTOR DRIVE

portion of the ethyl-alcohol extractives separated by the use of water and chloroform in separatory funnels and dried in tared beakers.

Ash was determined by heating 5-g. samples in silica dishes to 750° C. (1,380° F.) in a muffle furnace equipped with thermostatic control and by maintaining the samples at that temperature for 2 hr. The crucibles were cooled first to approximately 400° C. in the muffle furnace, finally in a desiccator over calcium chloride, and then weighed.

Cellulose contents were determined by wet oxidation in acid dichromate solutions after a 2-hr. extraction with monoethanolamine at 190° ± 3° C.

Breaking strengths were determined by the ravelled-strip method.

Weights were determined by measuring the samples under standard conditions and computing values by the method outlined by American Society for Testing Materials.

Fluidities in cuprammonium hydroxide were measured after a 6-hr. Soxhlet extraction with 95% ethyl alcohol using the Conrad velocity gradient technique (*Ind. & Eng. Chem.*, Anal. Ed., 13, 526-533, 1941). The viscometers were filled, the cotton was dissolved, and time of flow readings were taken at constant temperatures in an atmosphere of nitrogen. The results were computed on the basis of cellulose content and interpolated logarithmically to a mean velocity gradient of 500 sec^{-1} for comparison.

The degree of whiteness was measured in comparison with a magnesium-oxide white by means of a reflectometer using colored disks and a standard light source measuring intensities by means of photoelectric cells. A whiteness of 1.000 is pure magnesium-oxide white.

Absorbability was measured by the time-honored drop-square method and the well-known capillary rise. The drop-square test consisted of dropping a 2x2-in. square of the fabric on the surface of distilled water from a height of 1.5 in. and measuring with a stop watch the time required to sink. The capillary-rise method consisted in measuring the height to which water rises in 10 min. on a 1-in. strip hung vertically so that the lower end was immersed in distilled water.

Of the more than 10,700,000,000 yd. of woven fabrics produced in the United States during 1945, bleached cotton fabrics accounted for 6,600,000,000 yd. (47 yd. per inhabitant). It was of interest, therefore, to the Southern Regional Research Laboratory of the U. S. Department of Agriculture to investigate the chemistry of the various bleaching operations as applied commercially, with the purpose of improving the processes and

Color Dynamics..

Scientific use of *energy in color* builds up workers' morale, reduces fatigue, absenteeism and accidents . . . improves production!

• *One of the departments of the Lily Mills Company of Shelby, N. C., after it had been decorated according to the principles of COLOR DYNAMICS.*

Lily Mills executive praises new painting method!

THESE DAYS . . . alert manufacturers such as the Lily Mills Company of Shelby, N. C., consider carefully every development—no matter how new or unusual—which will help them build more and better goods.

Color Dynamics is new . . . is unusual—but within several years' time it has won praise such as this:

"Use of specific colors based on your Color Dynamic principles," writes J. W. Schenck, Secretary of Lily Mills, "is helping us to maintain a higher employee morale, a good safety record and efficient production throughout our entire plant."

Such success of Pittsburgh's new science, COLOR DYNAMICS, in a number of textile plants is not surprising. This new and purposeful use of the *energy in color* is based upon the physical and mental reactions of human beings to color.

Pittsburgh has worked out special methods to utilize this *energy in color* on every paintable surface—machines, floors, walls, ceilings and mobile equipment.

In all cases where these principles have been applied more work per man-hour and more man-hours per worker have been the result! Plant efficiency has been increased . . . Workers' eye fatigue is lessened, absenteeism is reduced, accidents are prevented and the quality and quantity of production are improved.

You can test COLOR DYNAMICS in your plant. Apply its principles to one or two machines—or one department. See the difference it makes in your organization.

Write for a FREE copy of our booklet, *"Color Dynamics"* which fully explains this new science. Address Pittsburgh Plate Glass Company, Paint Division, Dept. TW-48, Pittsburgh 22, Pennsylvania.

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The Governor of Idaho *invites You*

STATE OF IDAHO
OFFICE OF THE GOVERNOR
BOISE

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GOVERNOR

To American Industry:

Idaho is a state of vast undeveloped resources but nevertheless ranks high as a producer in agriculture, mine and forest. Unlimited opportunities for industrial expansion through the processing of these products exist in widely scattered parts of the state. Population shifts to westward serve to emphasize the desirability of this sort of development in Idaho where water, power, location and transportation combine to afford the finest of opportunities.

Expanding reclamation activities, a marvelous climate and an energetic and progressive citizenry enhance the value of these opportunities. Come to Idaho, Gem of the Mountains!

C. A. Robins
Governor

C. A. Robins

* One of a series of advertisements based on industrial opportunities in the states served by Union Pacific Railroad.

Unite with Union Pacific in selecting sites and seeking new markets in California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington, Wyoming.

*Address Industrial Department, Union Pacific Railroad
Omaha 2, Nebraska

UNION PACIFIC RAILROAD

Road of the Daily Streamliners

raising the quality of the resultant fabrics.

The part of that program which deals with a survey of modern commercial bleach processes which has been summarized in this article is reported in Technical Bulletin No. 941 of the U. S. Department of Agriculture, which can be obtained from the U. S. Department of Agriculture Washington 25, D. C.

Rayon Knit Goods

(*Continued from page 115*)

dryer drum. An endless mesh blanket holds the fabric against the cloth-lapped drum and prevents dimensional change while drying. Speeds of 40 to 45 yd. per min. have been reached; and shrinkage is controlled to a certain extent, due to the fact that the fabric is dried without warpwise stretch. After drying, the cloth is steamed and split into two rolls for shipping.

The interest of the trade in the entire field of tricot handling has been greatly accelerated. New plants are going up; and since many of the firms interested are also familiar with woven-goods handling, it may be expected that many of the straight-line operations favored in that field will be incorporated in the handling of tricot-knit goods.

CIRCULAR-KNIT FABRICS. The manufacture of circular-knit fabrics incorporates, as in other fabrics, the use of all fibers individually or a blend of any combination of them.

Recently developed continuous-dyeing processes have not yet been applied generally to this fabric. The method in general use is to dye such fabrics over a reel using, in most cases, direct dyestuffs. The procedure for dyeing circular-knit viscose-rayon-filament fabric is as follows: The goods are loaded in the dye kettle and given a light scour in soda ash and a synthetic soap at the boil. This is to remove the knitting oil used in manufacturing. Most of these oils are water dispersible; and some plants do not scour but run the goods for a few minutes in cold water, drop, refill, and proceed with dyeing. The method is, of course, much cheaper and simpler and is satisfactory provided the type of knitting oil used is known; but for all-around work, when it is not known what type of knitting oil is used, a light scour as outlined above will be good insurance against dyeing trouble. The dye is entered cold with about ½% of synthetic detergent, raised to the boil in ½ hr., boiled 10 min., the necessary salt added, run 15 min., and sampled.

Spun-rayon fabric is dyed in a sim-

Back of every great development in Textiles stands the Bobbin.

Spring heralds the season for blouses. And months in advance spinning mills all over the country start turning out extra yards of fine yarns—placing added responsibility on the Bobbin.

To meet these increased spindle speeds, Cloverleaf-Freeland works with leaders in the Industry studying new problems, experimenting with new constructions, developing a Bobbin built to new high standards of precision.

This is one example of the thoroughness at Cloverleaf-Freeland—thoroughness that builds great Bobbins.

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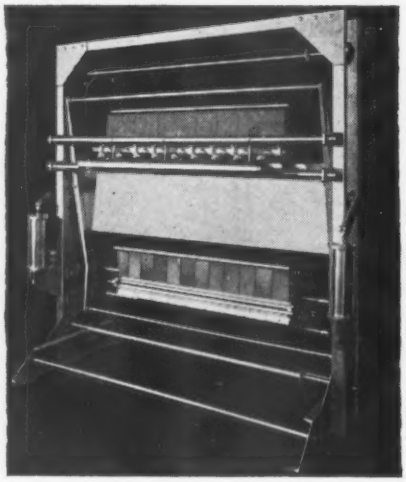
Honesdale, Pa. Hazleton, Pa.
New England Rep.: R. F. Makepeace, 9 Rhode Island Ave., Warwick Neck, R. I.
Southern Rep.: James T. Gordon, 1013 Woodside Building, Greenville, S. C.

CLOVERLEAF-Freeland BOBBINS

Automatic

CLOTH SINGEING MACHINE

for use on SYNTHETICS COTTON or WOOL



The I.H.E. Singeing Machine singes closely and uniformly in one pass, at speeds up to 375 yards per minute. Fully Automatic. Reduces cloth handling in the singeing room or when used in tandem with bleaching range, caustic boil-out or mercerizer. Never burns cloth. Oil, natural gas or any artificial gas can be used for fuel. Engineered for continuous heavy duty service. Write today for details and specifications.

INDUSTRIAL HEAT ENGINEERING COMPANY

Textile Drying, Curing and Singeing Equipment

701 WOODSIDE BLDG. • GREENVILLE, SOUTH CAROLINA

ROBISON

RAYON YARNS

We continue to offer a flexible service combining superior workmanship in the

- dyeing
- twisting
- finishing
- converting

of filament, spun rayon, and nylon yarns.

ROBISON PROCESSING COMPANY

Boston, Massachusetts • New York Sales: 450 Seventh Avenue

ilar manner. The goods are then extracted lightly and dried. The drying is usually either done on a loop dryer or, in the past, on a blower dryer which blows hot air through a flue and drys the cloth while it winds on a roll. The method is not used now, as it is too slow. A newer method is by means of the suction-drum dryer. After drying, the goods are run over a steam calender to width, rolled, and shipped.

During the war, a method was devised by which cotton circular-knit goods were dyed with vat dyes on the reel to meet Army specifications. This method is now being applied to civilian goods with increasing success, and it should soon be possible to dye any cotton circular-knit fabrics with vat dyes where they are so specified. This method has been attempted using rayon materials but so far without success; however, work is continuing along these lines, and it is hoped that before too long it will be possible to vat-dye rayon circular-knitted goods either by a continuous method or on the reel.

Some circular-knitted fabrics are made from dyed yarn which is usually package dyed or in some cases skein dyed. Such fabrics are made into children's jerseys and are mostly dyed with diazotized and developed or direct dyes; although, in a very few cases, they may be vat dyed. Fabrics which have been made from dyed yarns are given a light scour at about 120° F., rinsed, dried, and calendered, with care being used to keep the stripes straight; otherwise difficulty will be encountered during the cutting process.

Some rayon knit fabrics are split after dyeing and given several runs over the napping machine to give a pile or brushed effect. These fabrics are usually for women's wear. To reduce flammability when necessary, a flame-proofing treatment should be applied.

Shrink-Resistant Sock

(*Continued from page* 114)

tion of potassium hydroxide. It is interesting to note that even the most severe treatment did not cause much visible change in the surface scale structure of the fibers.

ENZYME PROCESS. The enzyme process involved treatment of the socks with an enzyme preparation. The socks processed by this method were rather badly damaged, lost considerable weight, and had a 30% index of 85%. Furthermore, they shrank 17%. These results apply only to the par-

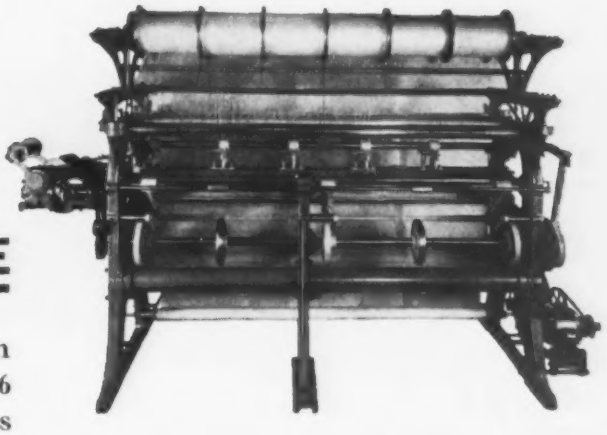
ARE YOU MAKING—

DISH CLOTH MATERIALS?

THIS MACHINE GIVES PRODUCTION SPEEDS NEVER POSSIBLE BEFORE

When you use the *Kidde* Knitter, you can knit 6 strips of dish cloth material, each 16 inches wide, at speeds of 180 to 200 courses per minute. That corresponds to 18 to 24 inches per strip per minute—*a total of 12 feet of material a minute!*

That's a substantially higher rate of production than has ever been possible before—but it's *typical* of the high, *sustained* speeds possible with the *Kidde* Knitter. A new drum drive, a new motion on needle bars make these speeds possible—and the machine is designed throughout to withstand them.



You'll find the *Kidde* Knitter adaptable to practically any type of yarn, thread or elastic—quickly and easily set up for simple or intricate patterns.

Use the *Kidde* Knitter on these materials too

ELASTIC FABRICS for corsets, girdles, brassieres. DRESS FABRICS. VEILINGS and NETTINGS. CURTAINS. NARROW FABRICS: edgings, braidings, laces. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters, polo shirts.

Write for free literature on the Kidde Knitter—or, better still, see for yourself what it can do. A machine is in operation at our Bloomfield plant—write for an appointment for a demonstration.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

DRUMMOND

SOAP AND FLAKES LEAVE

FABRICS CLEAN . . . SOFTER . . . COLORFUL!

You couldn't ask for an easier, quicker-sudsing soap or flakes than Drummond to give your fabrics the "New Look"!

Both Drummond Soap and Flakes have the advantage of high body and low alkali content . . . an advantage that leaves fabrics clean with a downier feel, brighter color, and whiter white. Try a sample and note the difference.

Write today for your FREE, ample-size sample of Drummond Soap—just ask for Flakes or Solid.

TEXTILE OILS AND SPECIALTIES

Standard Soap Co. of Camden

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CAMDEN, N. J.

G. TANGUAY
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Sterling Ring Travelers

CHANGES

When did you have Travelers fitted to your rings?

Rings are continually wearing, but are not replaced until the wear is considerable.

New Travelers are replaced every few weeks.

Are the Travelers correct now for the present condition of your rings?

H. B. CABANISS, Box 188 — Monroe, N. C.
M. H. CRANFORD, Box 204 — Chester, S. C.
D. R. IVESTER, Box 882 — Clarksville, Ga.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

ticular enzyme process that was investigated, and no general conclusion can be drawn from these data concerning the effectiveness of other treatments of this type.

SCALE STRUCTURE. It has frequently been suggested that the surface scale structure of wool is closely related to its felting properties, and it has been further suggested that chlorination processes are effective in reducing felting because they remove the surface scales. Presumably the fiber is made so slippery that it is no longer able to migrate and become entangled with other fibers.

The influence of scale structure was investigated by microscopic comparison of the surface scale structure of fibers chlorinated at various pH values. Fig. 1 indicates that chlorination at pH 11, 9, and 7 caused only a slight visible modification of the scale structure. At pH 5, the damage increased rapidly; and at pH 1, practically all semblance of the scales was destroyed. Since other experiments showed that the shrinkage control improved as the pH decreased, a relationship between the scale structure and the felting properties of chlorinated wool is indicated.

However, with other types of shrink-resistant processes the visible scale structure apparently is not so closely related to the felting properties; and it is possible that some other factors may be involved. Thus, Fig. 2 shows that the visible scale structure was not greatly altered by the alkaline hypochlorite treatment, the alcoholic potassium-hydroxide process, dry chlorination, and a melamine-resin process, yet various degrees of shrinkage control resulted from all of these treatments. When the alcoholic potassium-hydroxide process was conducted with alcohol containing 15% water, a large amount of fiber damage was indicated by the 30% index, but still the visible scale structure was changed only slightly. It was concluded that the scale structure might be altered without producing marked visible changes. In order to study this phenomenon further, recourse was had to the direct measurement of surface friction properties.

A recent development in the theory of wool felting is the idea that the directional-friction effect, as stated above, is of greater importance than the average over-all coefficient. In order to determine the contribution of the directional effect, the maximum and minimum friction coefficients of fibers treated by various processes were determined. From these data, the friction ratio and the friction index were calculated and are reported in

STOP COLOR BLEEDING

with *CULOFIX

Preserve crisp detail and contrast of prints by using time-tested Culofix as an after treatment.

Kill bleeding troubles no matter where they occur—in the finishing bath—batching up after dyeing—in cross dyeing, etc.

Improve water fastness of direct colors and impart a very desirable soft, full finish at the same time, thus eliminating an extra finishing operation. (Where no softening action is needed, Culofix L should be used.)

If fastness to water or prevention of color migration is essential to your direct color dyeings, write for Technical Service Bulletin #204-106.1. Our technical staff is at your service without obligation.

*REG. U.S. PAT. OFF.

Arkansas Co. INC.

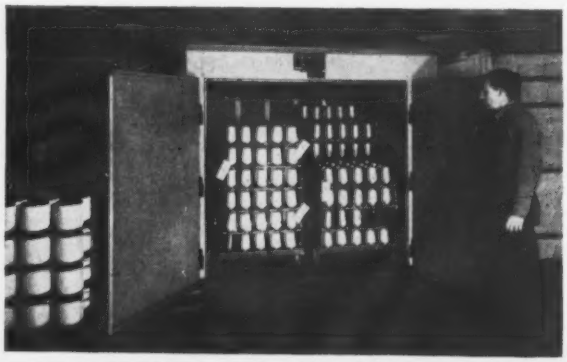
Manufacturers of Industrial Chemicals for Over 40 Years

NEWARK, NEW JERSEY

Series 2 of typical "H-W" CONDITIONER applications

SYNTHETIC YARNS, INC., (Mass.) *REPORTS advantages of the* ***"H-W" CONDITIONER**

The successful service record of the "H-W" CONDITIONER in operation in the mill of Synthetic Yarns, Inc., (Mass.) Lowell, Mass., is evidenced by the following report from Mr. Victor A. Schiffer, Technical Director: "We find the "H-W" Conditioner a good performer in holding uniform constant temperature and relative humidity conditions over a wide range of conditions, avoiding excess condensation. The timing device has been found helpful in reducing direct labor costs, as well as other costs. The boxes are of sufficient size to handle large workloads, yet are not oversize so as to result in waste space. The result is that we are able to apply the proper conditioning to each individual type of yarn. In a plant such as ours, where many types of yarns are handled, the feature of mobility is important."



View of "H-W" CONDITIONER installed in mill of SYNTHETIC YARNS, INC. (MASS.)

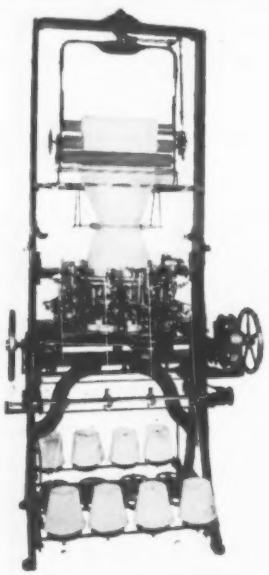
Full particulars in Bulletin UC-1 . . . yours for the asking.

*Trade-Mark Reg.

The Industrial Dryer Corporation
STAMFORD, CONN.

COOPER'S SPRING NEEDLE RIB
The Superior Knit Fabric
IS KNIT ON
COOPER'S SPRING NEEDLE CIRCULAR RIB KNITTING MACHINES

PENDING REESTABLISHMENT OF PRODUCTION OF THESE FAMOUS MACHINES WE ARE OFFERING A RECONDITIONING SERVICE THAT MAKES PRESENT MACHINES PRACTICALLY "GOOD AS NEW"
DIA. 13" TO 25"
6 TO 12 FEEDS



ALSO MANUFACTURERS OF
COOPER'S
PERFECT SPRING BEARD NEEDLES
AND
COOPER'S
HIGH SPEED NON-TURNABLE RIVET LATCH NEEDLES

CHARLES COOPER CO., INC.
BENNINGTON, VERMONT, U. S. A.

Table VI. Examination of the data in this table shows that the maximum coefficient of friction remained practically constant, but that all the treatments tended to increase the minimum coefficient of friction. Thus, the directional friction effect was reduced, which may be interpreted to mean that treated fibers would tend to move as easily in one direction as in another; in other words, there would be less preferential migration in either direction. The friction index, which may thus be thought of as measure of cause of fiber migration, was decreased by the treatments which gave the best shrinkage control; while the friction ratio, a measure of roughness, was increased slightly.

A noteworthy conclusion to be drawn from these experiments is that, contrary to popular belief, the fiber does not become more slippery as a result of chlorination treatments. Actually, the over-all coefficient of friction is increased by all of the shrink-resistant treatments.

Electrical Maintenance Reduces Mill Fires

More fires result from electrical faults than from any other cause, according to a recent report by Associated Factory Mutual Fire Insurance Cos. In summarizing fire losses during month of September 1947, the report listed the total loss by fire as $751,600. Of this total, $526,600 was lost through fires originating from electrical faults.

Electrical equipment is usually safely designed and well installed. Trouble rarely arises from new installations. As a rule, fires result from older installations that have not been properly maintained. Mill fires can almost certainly be reduced if the following pointers on maintenance are followed. These pointers were made by Westinghouse Electric Corp.:

MOTORS. 1. Keep windings, ventilating ducts, commutators, and brush rigging clean. If the motors operate in dusty locations—as around drawing, roving, and spinning frames—blow

A Feature to Remember!

ORATOL L-48 IS COMPLETELY SOLUBLE IN EXTREMELY HARD WATER . . . GIVES HIGH FOAM

ORATOL L-48

The problem in the scouring operation is to condition the goods to obtain even dyeing and level shades, and a fibre properly prepared for later operations.

The powerful detergency . . . rapid scouring action . . . great rinsability . . . and effectiveness of Oratol L-48 in neutral, acid, or alkaline solutions make it logical to expect cleaner goods better prepared for bleaching, dyeing, or printing. This means:

1. **Fewer rejects and redyes**
2. **More level dyeing—less streakiness**
3. **Clean, vibrant colors**
4. **Improved hand**

Other important advantages include more rapid cleansing and rinsing, less water requirement, and a speeding up of production through greater latitude of operation.

Ask our representative for full details on Oratol L-48, or, write today for technical data and generous free sample for testing.

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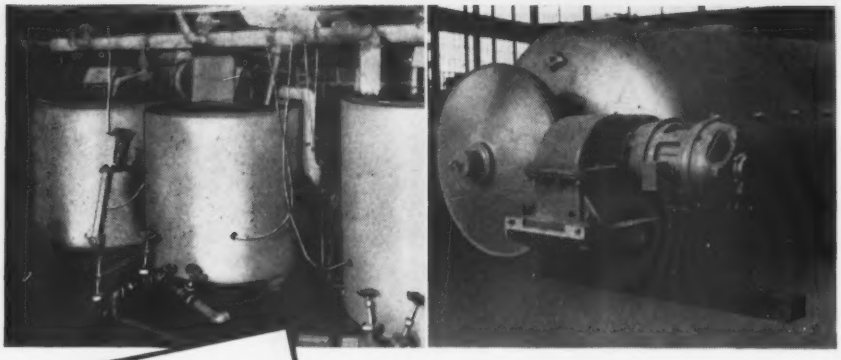
Plants: Passaic, Carlstadt, N. J.; Los Angeles, Calif.

Warehouses: Providence, R. I.; Philadelphia, Pa.; Utica, N. Y.; Chicago, Ill.; Greenville, S. C.; Chattanooga, Knoxville, Tenn.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.



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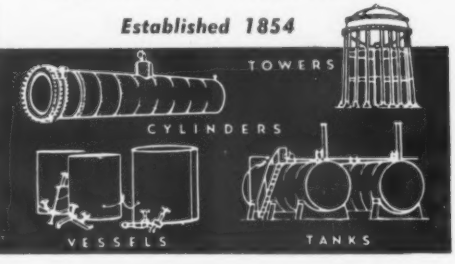
Established 1854



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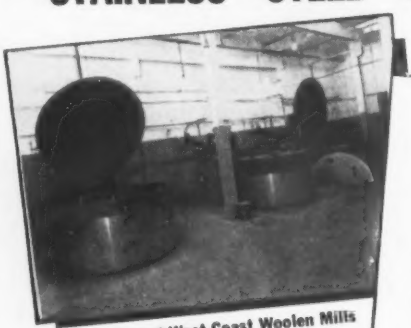
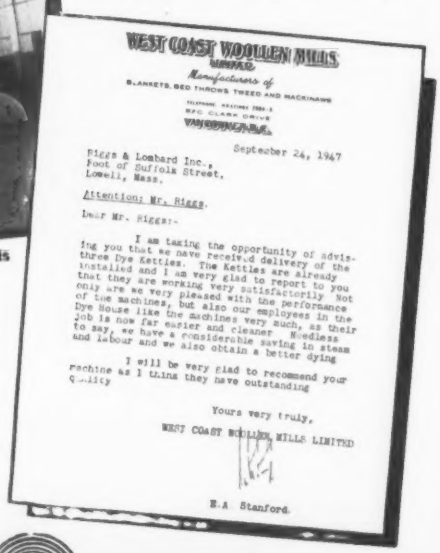
*STAINLESS STEEL STOCK DYE KETTLE

"Outstanding Quality"



Installation at West Coast Woolen Mills



WEST COAST WOOLEN MILLS
LIMITED
Manufacturers of
BLANKETS, BED THROWS, TWEED AND MACKINAWS
VANCOUVER, B.C.

September 24, 1947

Riggs & Lombard Inc.,
Foot of Suffolk Street,
Lowell, Mass.

Attention: Mr. Riggs.

Dear Mr. Riggs:-

I am taking the opportunity of advising you that we have received delivery of the three Dye Kettles. The Kettles are already installed and I am very glad to report to you that they are working very satisfactorily. Not only are we very pleased with the performance of the machines, but also our employees in the Dye House like the machines very much, as their job is now far easier and cleaner. Needless to say, we have a considerable saving in steam and labour and we also obtain a better dying machine as I think they have outstanding quality.

I will be very glad to recommend your

Yours very truly,

WEST COAST WOOLEN MILLS LIMITED

E.A. Stanford.

The letter reproduced here is the unsolicited opinion of one mill man about Fleet Line Stainless Steel Stock Dye Kettles. It reflects the general feeling of those who know, those who are using this equipment, that this dye kettle has no equal.

*Reg. U. S. Pat. Off.—Patents #2410214, 2275818 and 1863784

RIGGS AND LOMBARD
FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

them out weekly. Air pressure should not be greater than 50 lb.

2. Follow manufacturer's instructions in regard to lubricating. Strict adherence to schedule is important. Avoid over-lubricating; it wastes oil, gets oil in the windings, and causes insulation to deteriorate.

3. Inspect motors frequently. Heavily loaded motors should be examined daily; others weekly. Check oil rings, temperatures, and end play.

4. Check the air gap between the rotor and stator. On motors that operate with excessive belt tension, the air gap should be examined weekly; others monthly. If the air gap indicates bearing wear, correct at once.

5. Brushes and commutators should be checked weekly, oftener if the motor is in a strain. Keep commutators smooth and brushes perfectly seated.

6. Motor leads need inspecting weekly. Keep connections tight, free from oil and moisture, and well insulated.

7. Ground connections also should be inspected weekly and kept tight and in good condition.

CONTROL EQUIPMENT. 1. Clean starting switches, compensators, and air circuit breakers once a week. High-voltage bushings and terminals should be kept free of dust and dirt.

2. Contact points should be kept free of burned places. File or apply sandpaper to burned contacts. If the burned places cannot be smoothed and left in good condition, replace the contacts.

3. All parts of the control equipment should be inspected at least semi-annually, and worn or burned parts replaced. Keep all adjustments correct.

4. Vibrating parts need frequent inspection, perhaps once a week. Loose connections, missing or loose nuts, and broken parts should be found and corrected.

5. Check lubrication of control equipment once a month. Bring the oil up to its proper level, and replace dirty oil.

6. Overload devices should be inspected once a month. Check circuit breaker points, replace dashpot oil as needed, and keep orifices in plunger clear and leather bellows soft and pliable with neatsfoot oil. Make certain that overload relays are of the correct size.

OTHER PARTS. 1. Keep wiring in safe condition. Keep locknuts and

CHEMICAL DEVELOPMENTS

FINISHES
DETERGENTS
SOFTENERS
SIZE

THAT IMPROVE FABRIC LIFE, APPEARANCE & VALUE

Brytex PRODUCTS

Printing & Finishing

Brytex No. 745 Gum

is a printing thickener for vat colors that will produce the optimum color value at low cost. It is a smooth, free-flowing paste, suitable for the printing of small objects and large blotches as well.

Brytex Waxemul

produces a soft, smooth finish; is applicable to any and all fabrics. A very workable and economical softening agent. May be combined with starches, gums and similar finishing materials.

Brytex Conditionol W

static inhibitor for wool and blends with synthetic fibres. Efficiently eliminates static with no extra operations or equipment.

Brytexol N-7

a penetrating oil for dyeing. Also for sanforizing where maximum rewetting properties together with absence of gumming tendencies and complete resistance to discoloration and oxidation are required.

Warp Sizes

Brytex Spun Size O

a highly soluble gum for sizing spun yarns including blends of acetate and rayon fibre. Maintains a penetrated strong pliable protective coating for the yarn that reduces shedding and warp breaks.

Brytex Lubrene

a plasticizing lubricant for cotton, spun rayon and filament yarn sizing. May be used along with starch, gelatine and similar sizing materials. A concentrated material that will show greatest economy. A highly soluble oil that has proved very workable in the slashing room.

Brytex Hygel

a high gel strength size for filament yarns. A concentrated dry size, non-foaming. Dissolves quickly and completely. Absence of impurities or adulterants facilitates size removal and finishing.

Brytex Sizing Binder

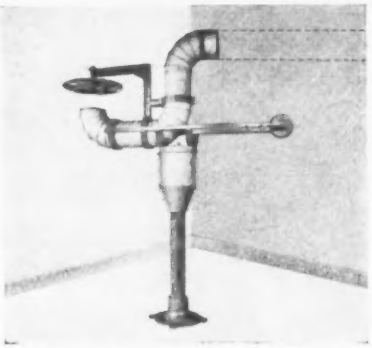
an adhesive and penetrating dry gum for cotton warp sizing. Increases size penetration, reduces shedding. Fully concentrated. Easy to weigh or measure, economical.

FULL INFORMATION ON OTHER *Brytex* PRODUCTS AVAILABLE IN BOOKLET "M"

BRYANT CHEMICAL CORPORATION

NORTH QUINCY 71, MASSACHUSETTS

THOROUGH BLENDING OF SYNTHETIC FIBERS



TRUSLOW* BLENDER (patented)

Synthetic fiber miracles, undreamed of yesterday, have become a fact in the textile industry today. Completely thorough blending of spun rayon, wool and cotton with fibers of other raw materials is more essential than ever before.

The Improved New Model Truslow Blender has been developed to provide thorough blending of almost all types of natural or synthetic fibers. The stock is blown through piping to the Blender. It then passes through a rotating arm and is blown up against the vanes of the canopy—making it revolve and distribute the stock in the form of a heavy snowstorm.

*Reg. U. S. Pat. Off.

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How to use COLORS more effectively

FROM psychological effects of individual colors on people—to specific formulas for mixing colors to meet the requirements of artists, painters, decorators, etc.—this new manual brings together the important pointers you should know in order to apply colors for best effect. Compact and well illustrated, the book provides a unique yet simple system for speedy, accurate identification and selection of a wide variety of today's standard and popular hues, tints, tones, and shades including 242 formulas for mixing them. Clear descriptions of each are given and 96 are shown in their exact color.

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By J. H. BUSTANOBY, Color Consultant

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THIS is an exceptionally useful guide for anyone concerned with making a discerning use of colors. Aside from the practical discussions of pigments, mediums and mixing procedures, it supplies scientific and usable facts on aesthetic values of color and the specific influence of color on our daily living. The book includes other important data on the legibility of colors, color combinations at a distance, and sensations caused by colors. A sound explanation of various color systems is given and the author's original color charts are furnished as a new kind of key to effective color matching and mixing.

9 chapters cover:

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3. Color Mixing
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bushings tight on conduit, cables, etc. Protect wire from oil, water, and mechanical damage. Inspect all wiring and insulation once a year.

2. Fuses should be checked semi-annually to guard against over-fused circuits. An overheated connection is a danger signal.

3. Oil in transformers should be tested each year to insure that the dielectric strength is maintained at not less than 18 kilovolts. Check oil level every 3 months, and test the operating temperature of the loaded transformer once a month. The temperature should not exceed 90° C.

4. Lightning arresters should be inspected in early spring. Check the condition and resistance of ground connections. The resistance should not exceed 5 ohms.

Textile Equipment News

(*Continued from page 156*)

to terminals on the bar by means of insulated snap-on connectors of the spark-plug type (see Fig. 3), and the applicators themselves are attached to the cables in the same manner (Fig. 4). All parts are thus readily removed or replaced.

As many cables as there are heads or rovings on the machine are plugged into the bar, spaced accordingly. They are supported in the exact position desired with respect to the roving by perforated clamps supplied with the cables. By bolting the perforated extensions of these clamps directly to the metal cover of the drawing rolls, the live applicators at the ends of the cables can be lifted with the cover out of the operator's way when he is working on the rolls. When the cover is again lowered into running position, the applicators are once more at just the right position with respect to the roving—¾ to 1 in. from the nearest point.

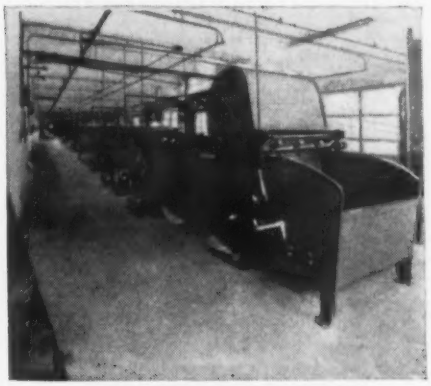
Choice of the applicator, four types of which are shown, is determined by the width of the web to be covered and the degree of ruggedness required. For single strands or very narrow webs up to 1 in., type A will suffice; for webs up to 3 in. wide, type B is used; up to 7 in., type C. For any width of web from the smallest up to 1 ft., type D, a metal-encased applicator which will withstand rough usage, is recommended. This type provides the additional protection of a grounded outer casing. By means of perforated strips, the outer casing may be mounted directly to the drawing-roll covers, or to some other suitable grounded part of the frame or other

HOW THESE OPERATIONS CAN GIVE YOU THESE RESULTS

KIER-BOILING OF COTTON

Clean, Absorbent Cottons

After weaving, grey goods are kier boiled with caustic soda under pressure for 8-12 hours to remove gums, waxes, pectins and motes. The ideal soap for this job is Armour's CERTIFIED—because CERTIFIED provides more rapid penetration into the fiber and better emulsifying properties. CERTIFIED, a vegetable fatty acid base soap, not only loosens dirt thoroughly—but also holds it in suspension until these impurities can be flushed away. Results: soft, clean absorbent fabrics ready for subsequent bleaching, dyeing and finishing operations.



RAW WOOL SCOURING

Soft, Lofty Wool

Raw wool is scoured to emulsify and carry away the natural grease and foreign matter on the wool. Since scouring is done at 115-120° F., the soap used should have a low-titer for ready solubility and rinsability. Armour's TEXSCOUR is your answer! TEXSCOUR forms a grease emulsion which can be broken down readily to reclaim the lanolin—and yet the emulsion is tight enough to carry away the grease and dirt. Besides, TEXSCOUR, a red oil base soap in flake form, exerts a buffering action on the wool and gives a softness to the hand which synthetics do not permit.

PACKAGE DYEING OF YARNS

Even, Uniform Dyeing

In package dyeing, the dye solution must penetrate rapidly, thoroughly and give the same shade to the inside as to the outside of the package of yarn. So in this case you need a synthetic detergent with high wetting and penetrating properties rather than a soap with high detergency. You need Armour's No. 412 REGAL Detergent. No. 412 gives you the powerful penetration required to prevent channeling of the solution and to provide ready access of the dye to all parts of the package. No. 412 is completely stable and effective under all dyeing conditions for all types of fibers.

Remember, There are Armour Soaps and Synthetic Detergents to Solve All Your Textile Problems.

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THE CASE OF INCREASED OUTPUT AND DECREASED COST

Notes from the Herrmann Casebook on Successful Management

AFTER WORLD WAR II a well known Eastern mill found itself confronted with an ever increasing work load. It was being swamped with new orders—but labor effectiveness was so lowered during the war that it was impossible to turn out goods on schedule.

THE ANSWER: A Herrmann Staff survey revealed the possibility of increasing production through *work simplification* and a *wage incentive plan.*

Management accepted the proposition, and both were installed together with an up-to-date *cost and production control system.* A *training program* designed to improve management and labor relations and to increase operating performance helped improve the *effectiveness of the mill.*

THE RESULTS: 20% reduction in labor costs and a 30% production increase.

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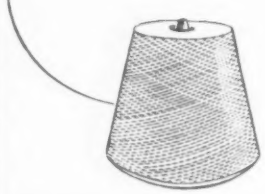
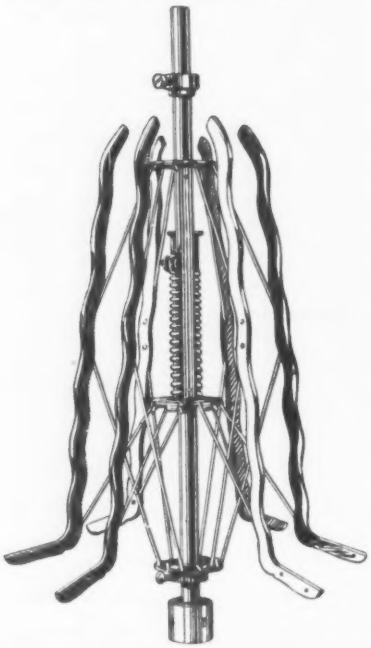


machine. Power is fed to the Octopus in the same manner as to any other Simco bar.

Advantages of the new Simco Octopus bar listed by the manufacturer are suitability to both small- and large-scale operations, rugged construction, flexibility of application, ease of maintenance on the job, and economy of first cost.

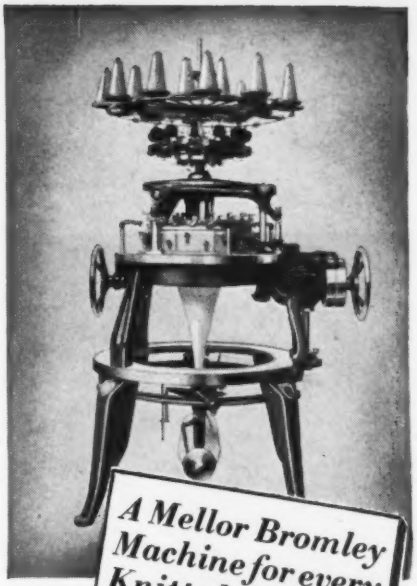
Cake Reel and Mounting Table Speed Winding



Full support is given the cake by the barettes of this self-expanding cake reel.

Foot-pedal action, leaving the operator's both hands free, collapses the reel for mounting of the cake.

The "Rayonex", a contractable and self-expanding metal reel for holding



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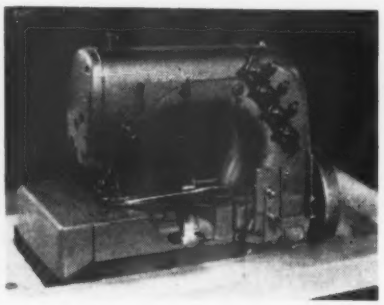
rayon cakes has been developed by Bruegger Winding Co., 318 E. Chelton Ave., Philadelphia 44, Pa. The cake reel is said to fit cakes of every size and make, support the cake by continuous gentle pressure, and center cakes automatically without regard to direction of twist or correct positioning. Difficulties encountered with conventional cake holders that offered no support to the cake are said to be eliminated. No inserts are necessary.

In order to simplify cake mounting, a counterpart to the cake reel, a special mounting table called "Servofil" has also been developed by the company. This table may be set up away from the winders, and operated by mounting specialists. Portable carriers with empty "Rayonex" reels are brought to the mounting table. The reel is placed over the table, collapsed by means of a foot-pedal, and the cake mounted. The cover cloth is unfolded and the mounted reel returned to the carrier which is then taken to the winders. The winder operator, relieved of cake mounting, changes the reels and mounts the "pie-plate" which is adjustable in height by a set screw.

If desired, the pedal mechanism can be mounted at individual spindles on winder or cores.

New Sewing Machine Has Improved Lubrication



***Knitted undergarment** sewing operations are performed at high speed by this new sewing machine.*

Light-running, high-speed performance, streamline styling, and improved lubrication are reported features of the new Class 52800 machines now in production by Union Special Machine Co., Chicago, Ill. These machines are of particular importance to manufacturers of knitted undergarments, and are specially designed for performing such operations as attaching split-tube borders, lace, collarettes, and cuffs.

Streamlining has produced a better, more commodious frame for housing the operating mechanism. Lubricating-system improvements include one reservoir that provides oil for the entire lower portion of the machine. The upper lubricating system is auto-

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SOAP
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GELATIN
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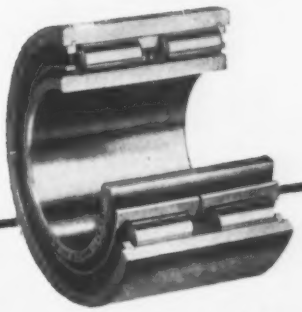
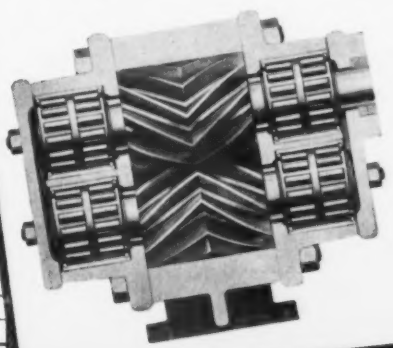


You Can't Lose! Worthington Rotary Pumps handle *all* of the above items—and many more. And the substance that passes through the pump also serves as the *only* lubricant for the four Hyatt Hy-Load Roller Bearings. Periods of service range from 2 to 24 hours a day, and Worthington reports most satisfactory performance: a tribute to Worthington's sound product design, and selection of Hyatt Roller Bearings.



Success in "unusual" applications like this simply goes to show that in any kind of application—wherever you need dependable bearings you *WIN* WITH HYATT. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

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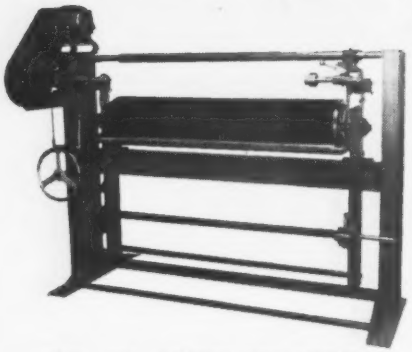
TUBING MACHINE



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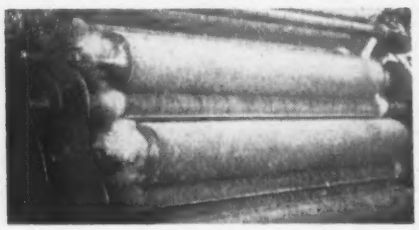

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matic, being fed from a reserve supply in the head. The machine is finished with "Dimenso" 3-dimensional metallic enamel, best described as taupe, a color which is easy on the operator's eyes.

Moisture Detected and Controlled Electronically

(McGraw-Hill World News) Moisture content in yarn or fabric passing through a slasher or dryer can be detected and controlled by use of two electronic instruments developed in England and distributed by Fielden (Electronics), Ltd., 1171 New York Ave., Huntington, N. Y. Operation of the unit is based on the principle that the capacitance of a 2-plate condenser will vary with the amount of moisture between the plates. The hygrometer unit has an electrode-unit (Fig. 3) consisting of two plates between which the cloth or yarn passes. Moisture content is indicated directly on a scale. Salt, dye, size, or other finish-

Fig. 1. Moisture content in material passing through a dryer or slasher can be detected and controlled electronically by this unit. (Fielden)

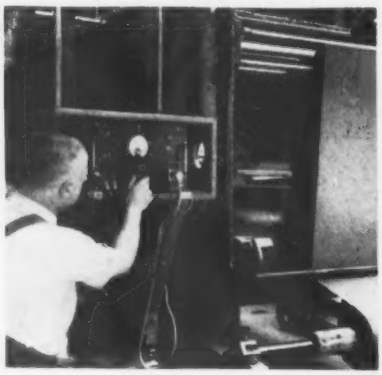

Fig. 2. The control unit is said to be adaptable to any existing machine.

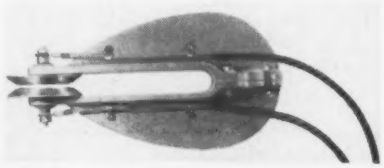

Fig. 3. Fabric or yarn passes through the gap in this electrode. It does not matter whether material touches the electrode or not.

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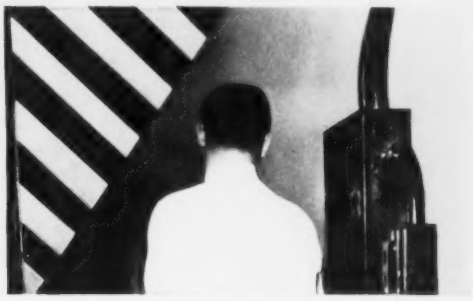
VISIBILITY. Color Conditioning reduces glare . . . thereby lessening eyestrain and fatigue. Provides the correct degree of "brightness" within the workers' field of vision.



SAFETY. Du Pont Safety Color Code helps prevent personal injury. Hazardous areas are "pointed up" . . . while colors and symbols show location of first-aid and fire protection equipment.

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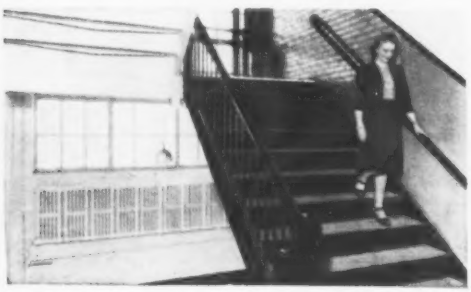

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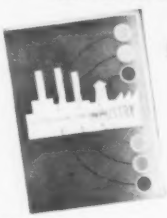

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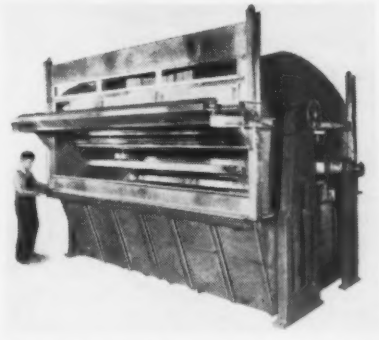
ing materials will not affect the operation, the manufacturer states.

The electronic hygrometer can be coupled to an automatic control unit produced by the same company. Speed of the processing machine is corrected in proportion to the moisture-content error. The control is entirely electronic. The two variables fed to the control unit are: (1) the voltage derived from the hygrometer, which varies according to the moisture content; (2) the voltage proportional to the machine speed, which is derived from a small alternator hooked up by a belt drive to a moving shaft on the drying machines.

The unit is said to be adaptable to any existing machine. It is claimed that when used on a dryer, and the material is well-woven and of constant thickness, the unit controls moisture to within a ±1% tolerance.

Stainless-Steel Dyebox Is Fully Enclosed



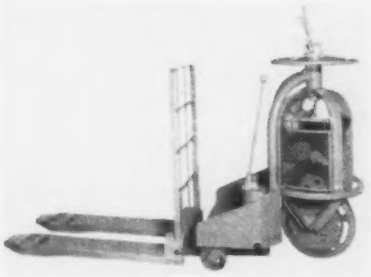
Counterbalanced doors at front and back of this new stainless-steel dyebox permit better control of dyeing.

A new fully-enclosed dyebox introduced by S. Blickman, Inc., has been designed to increase productivity in the dyehouse. It is said that the dyeing cycle is speeded up by reducing the time required for loading, heating, lacing, unloading, and changeover. A quick rinse is all that is required to clean the box to prepare it for the next run, the manufacturer states.

Counter-balanced doors at the front and back permit nearly effortless lifting and make the reels as accessible as in an open box. Glass windows on all four sides permit visual inspection during the entire run. Small patch doors permit sampling of any rope.

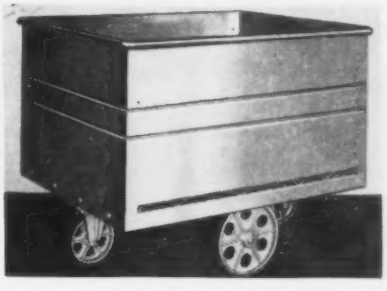
Since the box is fully enclosed, the dyeing operation is said to be more easily controlled. Spotting is eliminated and high-quality work is produced, the manufacturer states. Dyehouse fog is eliminated and plant maintenance reduced. Appreciable savings are said to be effected on fuel, water, and dyestuff.

Low-Cost Truck Handles 3,000 lb.



***The Load-Dispatcher** pallet transporter, a low-cost, gas-powered materials-handling truck has been introduced by Schwitzer-Cummins Co., Indianapolis 7, Ind. Loads up to 3,000 lb. can be handled, according to the manufacturer, at speeds up to 3 mph. The unit has no transmission, clutch, or radiator, and carries the Underwriter's Laboratories' seal of approval. The unit is available in three models: hydraulic lift platform in 6-, 7-, 9-, and 11-in. lowered heights; a fixed-platform model with the rear half of the platform hinged, particularly adaptable to handling drums and loose loads; or a tractor-towing unit.*

Drain-Bottom Truck Useful in Wet Finishing



***Liquid drains** from the sides of the corrugated bottom of this new truck, thus avoiding liquid damage to the wheels, bearings, and axle.*

A new drain-bottom truck intended primarily for use in textile mills and bleacheries, permitting the transportation of cloth while it is still draining fluid, has been announced by Lewis-Shepard Products, Inc., 284 Walnut St., Watertown, Mass. The box section is cleaned of excess dye or other fluids by flushing it out with a hose. There is no danger of absorption of liquid into the deck or sides of the truck as it is built of 18-8 nickel stainless steel, with rolled edges and reinforced sides and ends for greater protection and safety. The corrugated bottom drains from the sides of the truck to avoid flowing liquids over the running gear.

The truck can be equipped with end bumpers. The base is of heavy hot-dip galvanized steel. Wheels and casters turn on roller bearings. While

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steel wheels are standard, rubber-tired or Celoron wheels are available if desired.

Where complete cleaning of box interior is not essential, yet the drainage feature is desirable, the L-S drain-bottom truck can be furnished with box section of regular 1020 hot-rolled steel.

"Struck" Groove Needle for Lockstitch Machine

Better performance is reported by Union Special Machine Co., Chicago, Ill., in tests of "struck"-groove needles for its lockstitch machine. These new needles take their name from the process of manufacture in which the groove is formed at the eye by striking with a die and by milling the remainder of its length. This is said to have produced a stronger and more rigid needle with a smoother area around the eye, resulting in less needle breakage, less staggering of stitches, and less thread breakage. Time thus gained is claimed to offset many times over the slightly higher price.

Lamp Socket is Vibration-Resistant

Longer bulb life is said to result from use of this vibration-resistant socket.

Longer life for electric lights is claimed for use of a new socket announced by Mines Equipment Co., Dept. 29, 4215 Clayton Ave., St. Louis 10, Mo. Made of molded Neoprene, the socket accommodates standard-base incandescent lamps and prolongs the lamp life by protecting filaments from surrounding vibration. Molded as a unit to a resilient rubber mounting diaphragm that fits a standard 4-in. wall-outlet box, all necessary metal parts such as female socket, wires, connections, etc. are protectively encased in Neoprene, DuPont's rubber-like compound resistant to oil, acid, heat, and wear. In addition, a rubber bead on the socket's mouth fits the neck of the bulb snugly. This seals the socket-lamp assembly, and is said to protect its electrical connections against water, dust, oil, etc.

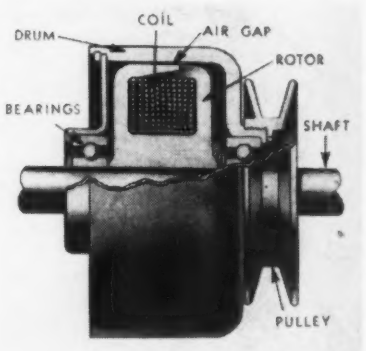
In a test carried out by the manufacturer, a bulb mounted in the new-type socket under considerable vibration is said to have outlasted three replacement bulbs in a conventional socket mounted alongside.

The socket is furnished with a 6-in. pigtail lead for wiring accommodating up to 150-watt standard Edison-base bulbs. Availability is immediate.

Automatic Unit Washes Precipitators

Elimination of manual cleaning of electronic precipitators is claimed for a new automatic washing unit recently introduced by Raytheon Mfg. Co., Waltham, Mass. The push-button-controlled unit automatically washes and dries all ionizers and collector plates, reapplies the adhesive, and shuts off automatically. Service of the precipitator is not interrupted, according to the manufacturer.

Constant Speed Delivered By Variable-Speed Source



Constant drum speed regardless of variation in speed of the rotor turned by the power source is maintained because of the nature of eddy currents induced.

The Dynamatic Drive, a new electromagnetic unit which delivers constant speed regardless of variability of the power source has been developed by Eaton Mfg. Co., Cleveland, Ohio. Applicable in the textile industry to maintain constant tension in winding, spooling, and in other operations, the

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The incentive of lower price naturally induces some of our customers—from time to time—to try some cheap substitute. Invariably these trials show up the imitations of NON-FLUID OIL for what they actually are—namely, ordinary cup greases thinned down with light oils to consistencies approaching those of our various NON-FLUID OIL grades. Such products, however, are found to separate freely even on standing. In actual service, under heat of bearings, the lighter element separates freely and wastes away just like ordinary oils, leaving behind thick, gummy residues. Such substitutes combine all the dripping and wasting drawbacks of liquid oil with the gumming and heating tendencies of ordinary greases.

Initial price is important, yes, but you must consider your long-range lubrication costs. Carefully tabulated performance records show every time that inexpensive substitutes are actually a great deal more expensive to use than NON-FLUID OIL which pays off in longer lasting properties and cleaner, better lubricating qualities.

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unit can, by auxiliary controls, be made responsive to temperature, pressure, time, and mechanical positioning.

Operation of the device is based on a well-known electromagnetic principle: When a conductor of electricity is passed through magnetic lines of force, electric currents are induced. The Dynamatic Drive consists of a drum of soft iron (the conductor) into which is fitted a rotor assembly. There is no mechanical contact at any point. The rotor assembly is turned by the power source, and eddy currents generated in the drum cause it to revolve. The force exerted by the drive varies directly with the load on the drum because as the increased load tends to slow down the drum, more strongly induced eddy currents result. Hence, constant speed, regardless of variation in the power source, is maintained.

Shuttle Construction Lends Strength

Metal parts are built into the shuttle body so as not to reduce strength.

A reduction in operating expense is said to result from design improvements in the new P.C.-Tension shuttle, for plain or shuttle-changing box looms, which was announced recently by the Southern Shuttles Div. of Steel Heddle Mfg. Co. Greenville, S. C.

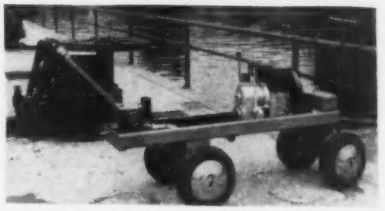
The bobbin-catch assembly is so designed and built into the shuttle as not to require weakening of the shuttle by cutting the walls or bottom away. These parts are solidly and scientifically built into the shuttle, according to the manufacturer. A patented rubber box that protects the metal base of paper tubes is also provided.

Fiber lock nuts are used as standard construction on this shuttle, and recessed-head screws can also be furnished.

The spindle, known as the R.B. Head, has a long bearing surface and is provided with a levelling device. Hard chrome-plate tension and pin are furnished if desired, thereby eliminating yarn cutting.

This shuttle can be supplied with Ste-Hide, the new phenolic cloth covering, or in fiber or plain dogwood.

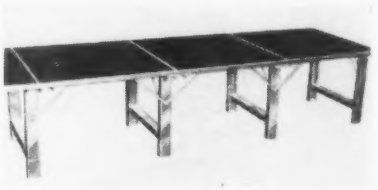
Portable Unit Opens Gates By Power



A portable, power-driven gate opener is especially designed for maintenance of 10- to 36-in. gates.

A portable, tractor-type, power-driven gate opener has been announced by Payne Dean & Co., Madison, Conn. The pneumatic-tired unit is available in three models, electric-powered, and 5- and 10-hp. gasoline-engine driven. Its principal application is in general maintenance of 10- to 36-in. gates operating in balanced flow. The simple operation of the unit allows one man to handle gates that would otherwise require four. Designs are also available that are readily convertible into a self-propelled tractor that may be used to carry a snowplow to clean a path 4 ft. wide, 10 in. or more deep.

Cutting Table Made Of Aluminum, Masonite



A long-lasting working surface and perpetual neat appearance are features offered in this aluminum cutting table.

Production of a new all-aluminum cutting table has been announced by C.R.A. Corp., 45 West 25th St., New York 10, N. Y. It is claimed that this is the first time that aluminum has been incorporated into cutting tables to provide a sturdy as well as attractive piece of equipment.

The new table is constructed of heavy-duty aluminum, has a Masonite top, and individually adjustable legs designed to insure level cutting surfaces on uneven floors. The table is

Announcing the New and Improved

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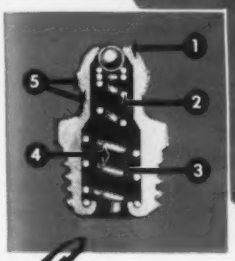
BULLNECK TYPE

The Hydraulic Fitting with a SURFACE CHECK . . .



Check **These Features:**

1. . . . **Flush Ball Check**—Head can be wiped clean without forcing dirt into fitting and into bearing.
2. . . . **Large Grease Passage**—The larger internal diameter permits greater flow of lubricant.
3. . . . **Special Spring Design**—Spring cannot be compressed to restrict flow of the heaviest lubricants.
4. . . . **Greater Flow—Less Resistance**—The larger internal area requires less pressure to clear the fitting.
5. . . . **Sturdier Construction**—Enlarged neck size and projecting locking pad protect against damage and wear.

These Grease Fittings (Bullneck Type), were originally developed by the Lincoln Engineering Company for the United States Army Ordnance Department. They incorporate the most desirable characteristics of former types of high-pressure fittings and permit standardization of one, all-purpose fitting (Bullneck Type). They represent the first major improvement in grease fitting design that does not obsolete couplers and grease guns in general use today—they can be securely contacted by all commercial hydraulic couplers.

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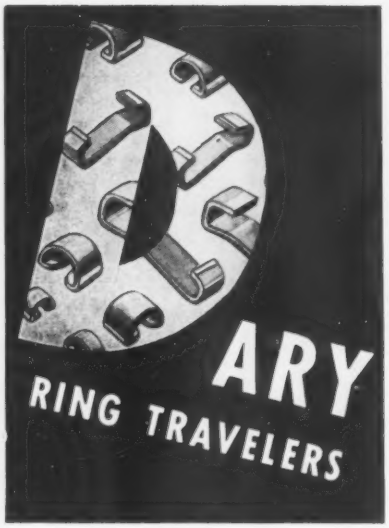

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The tiny traveler unlocks the way to better spinning by providing just what is necessary at the heart of the spin. You must have the right key, however, and DARY is it.

Dary Ring Travelers are right because they are processed for longer wear around the ring. Hard, smooth and tempered for durability, they make higher spindle speeds possible with every type and count yarn.

Ask your friendly Dary Representative about the *keys to your spinning success* — Dary Ring Travelers. He will be glad to tell you the whole story of Dary Dependability.

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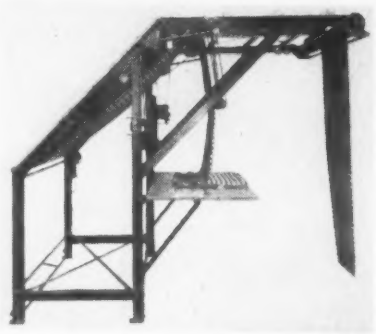
H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

built in 4-ft. sections (made up to any length), and is easily assembled or taken apart. The table can be moved from place to place without difficulty.

An important feature of the new table is the metal channel which runs around the entire edge of the table, providing greater strength and durability. Moreover, the channel is designed to prevent the Masonite top from ripping away, eliminating the danger of loose tops which interfere with the operation of the cutting machine. The new all-aluminum table is not limited to cutting, but can be used for any other purpose where a solid work table is needed.

Woolen Inspecting and Folding Machine Announced



A new inspecting and folding machine for woolen fabrics with an unusually large examining board and of heavy construction throughout has been announced by Hermas Machine Co., Hawthorne, N. J. Folded cloth is delivered either on a platform or, with the hinged platform dropped, into trucks.

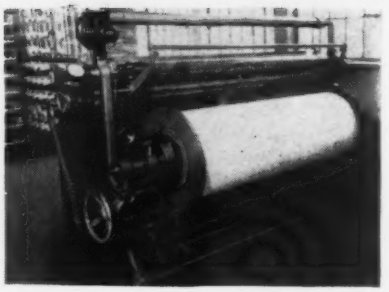
The operator can use the pedal control; or operate the unit by remote control for distant view. For the latter a small start-and-stop switch is carried in the hand.

Warper Announced By Czechoslovakian Firm

Every factor affecting the quality of warping is said to be controllable on a new warper developed by Czechoslovak Metal & Engineering Works, Prague II, Jungmanova 29, Czechoslovakia.

A hand wheel adjusts operating speed over a wide range, and constant winding speed at the rate selected is said to be maintained by a light roller running in contact with the beam. An indicator shows the actual speed at all times. A rapid-braking mechanism is designed to stop the beam before a broken end can be wound.

A warp-measuring device operated by the measuring roller stops the warper when a predetermined length is wound. Doffing the beam is done by a tilting motion, either by hand or mechanically.



Winding speed, length, and density are some warping factors individually controlled in this warper.

Accumulation of fly is prevented by an oscillating blower mounted above the expanding reed. Warp density is kept constant by an adjustable roller which compacts the beam during running and by a traversing motion over 0.78 in. Maximum flange diameter is 28 in.

Wool Skein Dyer Has Pulsating Flow

A "pulsating" skein-dyeing machine for heavy woolen and worsted yarns is being produced by Smith, Drum & Co., Allegheny Ave. below 5th St., Philadelphia, Pa. under license from Samuel Pegg & Sons of England. The "pulsating" principle provides intermittent flow of the liquor by automatic starting and stopping of the pump motor according to a predetermined cycle. Advantages claimed are previously unmatched level shade and uniform quality, prevention of yarn snarls, a low (about 10 to 1) liquor-to-yarn ratio, use of less floor space through large capacity, ease of changing colors, and automatic operation.

The design of the stainless-steel yarn carrier and the machine is such that uniform flow is provided, which means that more yarn can be handled in a given space than on similar older types of skein-dyeing equipment. The poles on which the yarn is suspended are specially designed to eliminate generally the stick marks which were an inherent characteristic of the older machines. With these features, there is combined the pulsating-type flow which for certain types of work is highly desirable, as it practically eliminates tangling or crimping of the skein. Intermittent flow is in downward direction only. The top cover of the yarn carrier is fitted with two inspection doors.

The tank of the machine is of heavy gauge 18-8 SMO stainless steel so constructed as to be self-supporting. The tank is fitted with a quick-opening drain valve, perforated stainless-steel steam pipe and water inlet.

A stainless-steel propeller circulates

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WATER COOLERS
with the
5-year Protection Plan

Model WW22

For locations such as textile mills, with foreign particles in the atmosphere, water coolers with *water-cooled* condensers are the only good solution. Water, rather than air, cools the condensers, eliminates lint and dust particles and maintains full refrigeration capacity. Westinghouse Water Cooler models WW14, WW22 and WWE14 include water-cooled condensers as standard equipment.

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For installations where air cooling is permissible, Westinghouse provides four other models. A Bottle Cooler and six Pressure Coolers; seven models to assure a capacity for every need. All require only 14 square inches of floor space . . . all are Hermetically-Sealed and carry the 5-Year Protection Plan.

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Electric Appliance Div., Springfield 2, Mass.

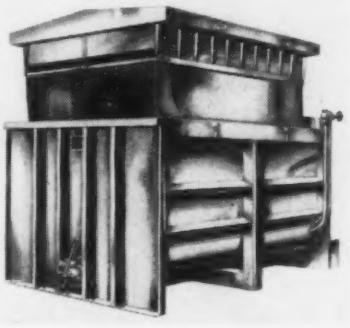
Westinghouse
WATER COOLERS

the dye liquor. This propeller is driven by an a.-c. motor through a V-belt drive.

The machine is complete with a control panel for automatically starting and stopping the motor to provide the pulsating effect and for reversing the motor for two-way flow. This control panel also includes a dial-indicating thermometer, directional-flow-indicating lights, equipment for shutting off the steam supply when the flow is in the upward direction, and a timer alarm system for calling the operator's attention to the machine at the end of a predetermined period.

In cases where more accurate control of the dyeing process is desired, the control panel may be fitted with either automatic or elapsed-time temperature control.

The machine is designed to handle up to 72-in. skeins, and has maximum capacity when carpet skeins of this size are used. The unit can be modified to handle 90- or 100-in. skeins. Capacities from 100 to 1,200 lb. are offered. Availability is about nine months.



***Unexcelled level shade** and uniform quality are said to result from the operation of this skein-dyeing machine.*

Mothproofing Common In
SWEDISH WOOL INDUSTRY

***HIGHLIGHTS:** Swedish manufacturing methods lag behind U. S., but 90% of Swedish fabrics mothproofed—Testing methods less severe—Living standards of textile laborer comparable to U. S.*

THAT SWEDISH TEXTILE MILLS are years behind the United States in manufacturing methods but years ahead in mothproofing was reported by John B. Wathey, vice president of Bocon Chemical Corp., in a recent press conference following his return from Sweden. During his visit, Mr. Wathey, whose firm manufactures Boconize, a mothproofing compound [TW, Feb. '48, p. 160], visited 24 of Sweden's 50-odd mills. Of the 24 mills visited, 22 were using mothproofing compounds.

Part of the reason that Swedish mills are not geared to produce in the quantities that can be turned out in American mills is that the population is only 8,000,000, as compared to 140,000,000 in U. S. Consequently the demand is not so great.

Swedish mills work on an 8-hr. day, Mr. Wathey reported, and because of the shortage of coal, can't fire their boilers for longer periods. The result is that not enough steam is built up to run the machinery until a couple of hours after the work day has started. In effect, this makes a 6-hr. day. Asked why they don't run an around-the-clock, 2-day week as a more efficient method of using the coal supply allotted, they answer that the Swedish textile mill employee is an independent individual and does not like night work.

"The Swedish textile industry employs something like 81,000 people. Their wage rates are lower than in American mills, but at the same time the cost of living over there is lower," said Mr. Watley. "I would say that, comparatively speaking, the Swedish woolen-mill employee is paid as well as his American counterpart. Working conditions are good, and the mills there go in heavily for the use of music played in factory areas during working hours.

Research facilities in Swedish textile institutes are well-developed, and there is keen interest in laboratory developments. Right now one of the main studies is concerned with the frictional coefficients of wool fibers.

Swedish fabrics are generally coarser and heavier than ours. Public acceptance is such that lightweight, soft nappy woolens are assumed to be of poor durability. Mr. Wathey voiced the opinion that perhaps this is a reflection of the Swedish tendency toward formality and seriousness. Everybody there has a title—no matter what his job. Instead of saying "Mr. Swenson" one says "Engineer Swen-

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Now you can save money and avoid future service troubles by specifying the new ARMCO Stainless Steel Type 316 ELC (Extra Low Carbon) for your welded processing equipment.

Because it is so low in carbon (.03% maximum) ARMCO ELC eliminates intergranular corrosion by preventing harmful carbide precipitation during welding. Type 316 ELC staunchly resists corrosive attack near the welds when your wet processing equipment is in service.

Heretofore, in certain kinds of equipment, the excellent corrosion resistance of Type 316 has been safeguarded by adding columbium as a carbon-stabilizer. The low carbon content of this new ARMCO grade accomplishes the same purposes—at less cost.

Annealing after welding is not necessary, except in cases where engineering requirements specify stress relieving treatment.

ARMCO ELC is ideal for severe corrosive conditions at temperatures *below the sensitizing range*. It can be used to advantage in agers, bleaching machines (chemic), fulling machines for knits, phosphating and tin weighting machines (rayon, nylon and silk); for carbonizing equipment, dye kettles and piece carbonizers (acid tank) in wool processing equipment.

Get more information about ARMCO "ELC" Stainless Steel. Find out how *you* can take advantage of the special corrosion-resistant properties of this stainless steel. Just fill in and mail the handy coupon. Or ask your equipment fabricator to inquire about ARMCO "ELC." The American Rolling Mill Company, 262 Curtis Street, Middletown, Ohio.

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son," or "Streetsweeper Swenson," or whatever his job may be.

More than 90% of Swedish wool textiles are mothproofed, whereas in this country probably only a fraction of 1% now have such protection, he stated. There are two reasons why Swedish mills go in so heavily for mothproofing. One is their concern for building customer good will. They know that customer preference lies toward a product which will resist attack by wool's greatest enemy. The other reason is that the Swedish government, which controls prices, allows the textile manufacturer to charge a higher price for fabric that has been treated to provide moth protection. This higher price not only allows for the cost of the treatment, but also a slight additional profit. And since the public is willing to pay a higher price for a mothproofed article, the manufacturer finds it advantageous to treat his wool fabrics.

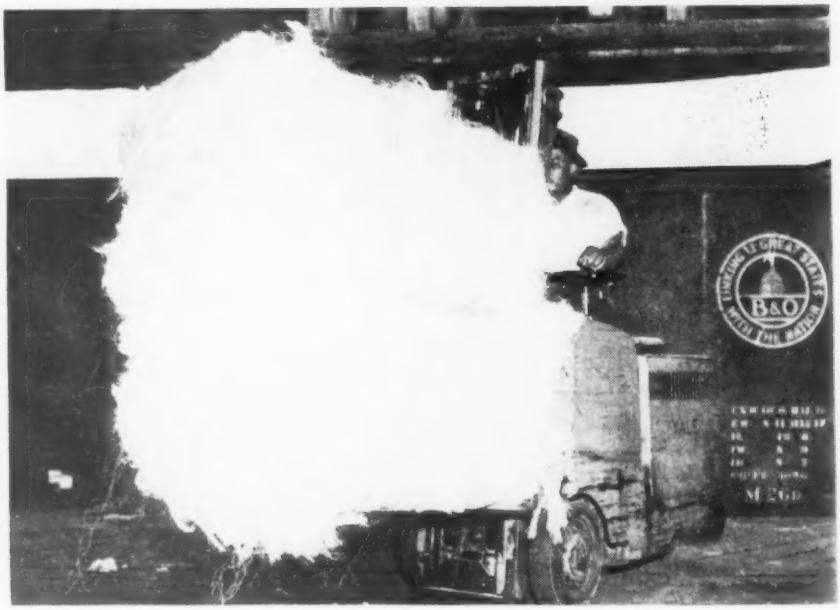
Mothproofing in Sweden is so common that the fact that a fabric is so treated does not even appear on the label. In fact, in case a fabric is not treated, one is more likely to find a label stating that fact, said Mr. Wathey.

Swedish testing methods are not so exacting as ours, Mr. Wathey continued. For example, if chemical analysis over there shows a trace of the mothproofing compound still on the fabric after a number of washings, it is considered mothproof even though there may not be enough to keep the larvae from attacking the fabric.

Further, Swedish laundering tests are not so severe as ours. A compound that withstands five washings of the AATCC type is equivalent to about 15 of the Swedish type. They say that ours are tougher than need be, that theirs are more like the kind of washing a housewife would give a piece of wool fabric.

FORK TRUCK Aids Railroad In Handling Baled Fibers

HIGHLIGHTS: *Railroad depot work has much in common with mill warehousing—Illinois Central lists four benefits of fork-truck service.*

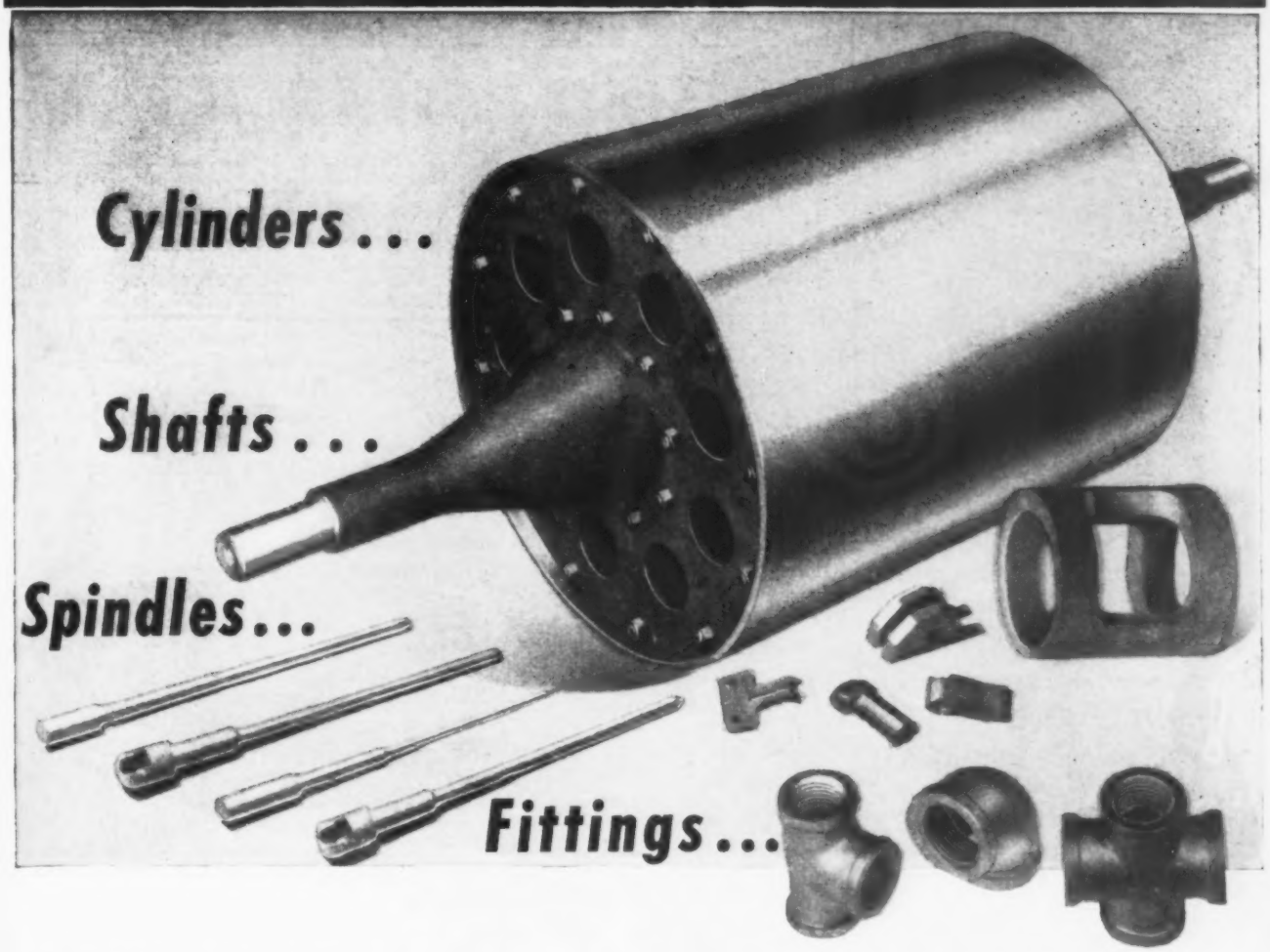


Fork truck helps Illinois Central Railroad to handle bales of hard fibers, cotton, and other commodities at its New Orleans depot. *Yale & Towne Mfg. Co.*

THE ILLINOIS CENTRAL RAILROAD has made use of fork trucks in the receiving, transporting, and warehousing of bales, a usage which may be of interest to the producer and manufacturer since their problems have much in common.

Advantages gained at the New Orleans depot are described by the railroad as follows: (1) the truck is self-loading and needless manpower is not wasted in loading bales on carts or wagons; (2) the fork truck picks up its load inside the boxcar, eliminating

MISCO *Stainless Steel* CASTINGS



Whatever your need may be in the realm of stainless steel castings, MISCO can probably supply it. We cast many types of stainless steels to withstand corrosion, heat or wear.

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***for* COTTON AND SYNTHETIC FIBERS**

the necessity of extra handling in getting the bale outside the car; (3) the truck can lift bales overhead for tiering, thus making available additional head room which could not be economically utilized if the bales had to be stacked by hand; (4) no pallets or skids are required, as the forks of the truck can slip beneath the bales without damaging them; and (5) demurrage will be decreased due to speedier car loading.

The forks are adjustable and tilt backward to handle the large heavy loads without danger of sliding off when going down grade, turning corners or coming to sudden stops.

Baled commodities, such as cotton, sisal, rags, and hemp can be handled as described, and there are no worries as to the truck being idle if there are no bales to unload, for crates, bags, barrels, cartons, tins, pallets, and boxes all lend themselves to ready manipulation by such a truck whether in freight station or warehouse.

RUSSIAN RESEARCH Results In Machine Improvements

HIGHLIGHTS: *Aim is to save critical materials and increase life of accessories—New materials for bobbins, shuttles, cylinders, etc.—Electroplating regarded as important.*

By ANDREW STEIGER
McGraw-Hill World News, Moscow, Russia

SUBSTANTIAL ECONOMIES are under way for the Soviet textile industry as a result of the work by the Central Research Institute of Accessory Materials & Details, founded about a year ago.

The institute is engaged in studies directed to economizing critical materials as well as extending the useful life of various accessories.

The first announced results of research at the institute cover improved types of spools, shuttles, bobbins, and other machine parts. These are briefly described below:

Durability and firmness is claimed for a new spinning bobbin which is made of paper saturated with synthetic resins. The bobbin is said to be specially resistant to deformation under working stress, the cause of frequent replacement of bobbins heretofore in use.

In porous chrome-plating of spindles, the institute found a means to make spindles last four times as long and spindle bushings twice as long as formerly. Since several million spindles are utilized annually, this method represents a major economy. Details were not disclosed.

Shuttles made at the institute from specially compressed birch proved to be two to three times more resistant to wear-and-tear than shuttles from compressed liguine.

The institute has developed tubes for carding and ribbon-lap machines from a cheap grade of paper. The resulting tubes are exceptionally solid and of seamless construction. Mass production of this new detail has now been launched, while its inventor is working on the creation of a shuttle made of paper.

In the institute's galvanizing laboratory, experiments are being carried out on electrolytic covering and electrogrinding of mechanical parts. Electrogrinding reduces to one or two weeks the preliminary run-in time for spinning frame rings, which formerly took two to three months. It also economizes on abrasives and labor.

An annual economy of 2,000,000 rubles in linen is expected from a new double-conic bobbin for wet spinning of flax, which the institute developed from plastic material. The bobbin is said greatly to increase equipment output.

The institute's standardization section unified a number of accessory parts, particularly shuttles, spools, and picking sticks, reducing the number of types and varied dimensions from 2,171 to 390. This work has markedly facilitated increased part-production at reduced cost.

The institute has a score of laboratories staffed by chemists, metallurgists, and experts in wood pulp, elastics, plastic materials, and paperware. Among its research workers are three doctors and four candidates of technical sciences, including engineer M. S. Tartakovsky, who was awarded a Stalin prize for developing a special synthetic material to replace critical leather as a covering for drafting rolls of spinning machines.

Now finding its premises too small, the 1-yr.-old institute is clamoring for more laboratory space.

AIR EQUIPMENT TO HELP YOUR BUSINESS

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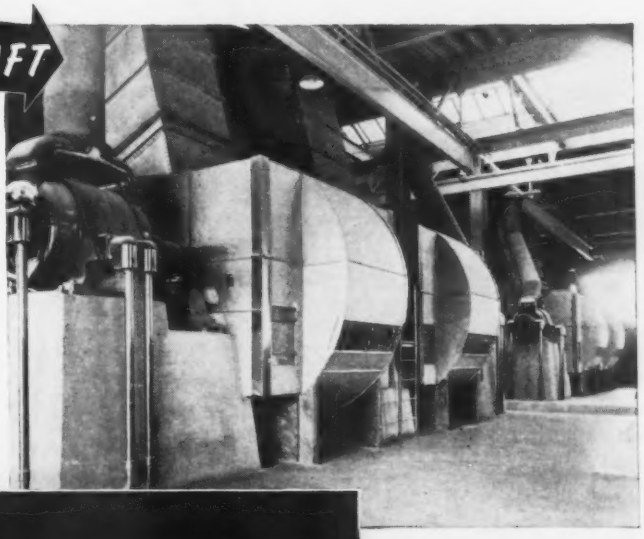
ASSURE Reliable Draft

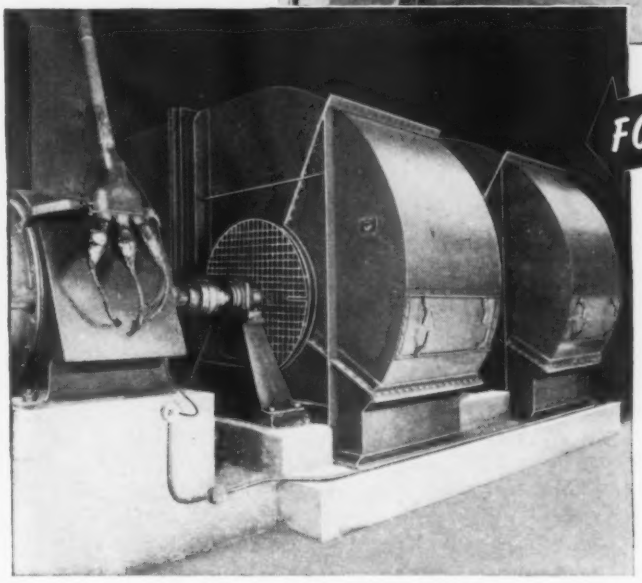
One of a battery of eight "Buffalo" Induced Draft fans in a prominent power station.

FANS by "Buffalo"

INDUCED DRAFT

The rising pressure characteristic is one of the features power plant operators like about "Buffalo" Induced Draft Fans. This, coupled with flat horsepower performance assures minimum power consumption. Accessible construction makes servicing easier. *Bulletin* 3190-B *gives all specifications.* Write for your copy.





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Here are husky, high-efficiency fans built to deliver right up to rated capacity, even when the fuel bed is extra heavy! Their non-overloading characteristic, too, allows arranging several fans to discharge into one duct without fear of burning out motors. Write us for facts. *Bulletin* 3113-A.

Two high-speed "Buffalo" super Limit-Load Forced Draft Fans. Note convenient cleanout doors.

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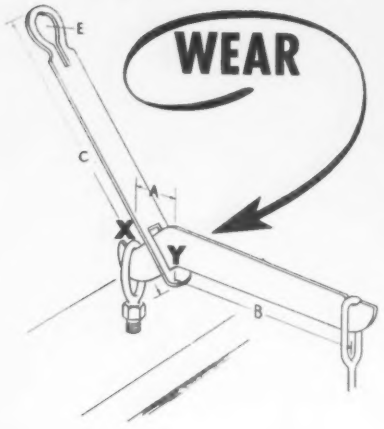

WHAT you don't know CAN hurt you! It can be extremely painful. Excessive wear of stirrups and levers in your drafting assemblies, especially when *not* noticed, prevents GOOD SPINNING.

For example, excessive wear at points "X" and "Y" above, often unseen, will destroy proper weighting ratios. Careful inspection of stirrups, levers and lever screws should be made regularly, and worn parts replaced immediately.

DIXON makes a large line of weighting appliances designed to function perfectly and produced in volume. The savings effected by this volume production are passed along to you. Order your parts from Dixon now and compare for quality and price.

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➡ 3. Over 35 different lever screws with varying diameters, threads per inch and loop lengths. Quick delivery of spare parts is possible in most cases. Be sure you know your saddle assemblies are doing their job.

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LUBRICATING SADDLES

***An inventory of card-bearing reconditioning** is a necessity if maintenance is to proceed systematically and intelligently. There are four principal methods of bearing-reconditioning now in use. Most of them apply to all vital points, from feed-roll to comb box.*

Bearing Reconditioning At CARD Saves Quality

***HIGHLIGHTS:** Southern mills bore out worn feed-roll journals, press in case-hardened inserts of correct size — Self - lubricating bearing - inserts may be placed over case-hardened journals—Journal and bearing reconditioning performed at doffer, comb, and lickerin.*

By C. R. BLAKENEY,
Manager, Industrial Engineering Co., Kershaw, S. C.

IMPORTANCE of correct bearing maintenance shows up when a mill changes from cotton to synthetics or wool blends. Some mills have trouble, particularly at the card, during such changeovers. A check of the card may disclose worn feed-roll journals, flutes, and bearings. These faults cause what is known as "pulling in" of the lap, or slippage, which results in serious damage to clothing, poor-quality of web, and loss of production. The mill must recondition the feed rolls to correct size; but, when reconditioning feed rolls, the best-advised mills do not change the original size of the rolls. Experience teaches that journals and bearings must be kept on standard size, whether the self-lubricating or other types of sleeves are used.

[Editor's note: Condensed from an address before the Southern Textile Association at which Mr. Blakeney was asked to give practical information on card-bearing replacements.]

Sometime ago, a machinery manufacturer supplied split bearings at the feed-roll. This expedient lasted for a long time; but when both journal and bearings began to deteriorate, the cards again required overhauling. Some mills copied this method and found temporary relief. Most mills, at the present time, maintain standard sizes and rely upon proper lubrication to lengthen journal and bearing service.

When feed-roll bearings and journal are standard, a No. 5 gage can be placed between the feed plate and roll. Although this setting may vary slightly between various makes of cards, it is approximately standard for all. What can be done to repair or replace journals and bearings when they become worn? There are at least four methods now in general use:

1. Bore out worn bearings, press in two pieces of self-lubricating material (one for each end), and leave a reservoir in the center so that the bearing will have ample storage space when the oiler floods the bearing. The reservoir prevents the lubricant from running out on the floor.

2. Cut off worn journals, bore them out, and press in special case-hardened journal-inserts of correct size.

3. Build up the journal and turn it down on the lathe; or, similarly, metallize the journal and machine it to proper dimension.

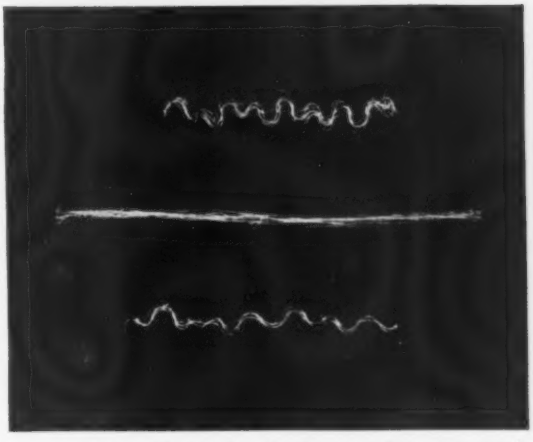
4. Combine the self-lubricated bearing inserts over the new, case-hardened journals.

BENT FEED-PLATES. During reconditioning of feed rolls, the ends and

Rayon Reports

Avisco Crimped Staple Adds New Proof of Rayon's Versatility

Introduced little more than a year ago by American Viscose Corporation, the new Avisco Crimped Staple continues demonstrating rayon's title as the most versatile of fibers. It is already going into fabrics for blankets, dresses, suits, sport shirts, draperies and many more things... by itself or in blends.



Avisco Crimped Staple (top), can be temporarily straightened by wetting and drying out under tension (center). When wet and dried out again in a relaxed state, its full crimp returns (bottom).

To all of the other well-known advantages of rayon, the new crimped viscose rayon staple adds the quality of permanent waviness. This gives soft nap fabrics such as blankets greater bulk and loft, without increasing their weight. It makes high-twist goods such as gabardines feel lively and crisp. It reduces seam raveling during laundering.

While this product has advantages on all systems, these are particularly well demonstrated on the worsted system. Cohesion is excellent, aiding in gilling, combing, blending and drawing. In the last, the added cohesion permits less twist—a production boon — while ends down per hour and fly waste are materially lessened.

Other advantages on various systems are set forth in the booklet, "Avisco Crimped Staple," which also includes swatches of interesting new materials containing the fiber. The booklet is being distributed to textile technicians and manufacturers.

"KNOW YOUR FABRICS"

An informative discussion program, especially adapted for women's clubs, has been prepared by AVC. Entitled "Know Your Fabrics," it is now being distributed to 10,000 women's clubs throughout the country. It includes a complete script for a forum meeting, reference leaflets, working guide for the program chairman, a quiz for members and other useful club material.

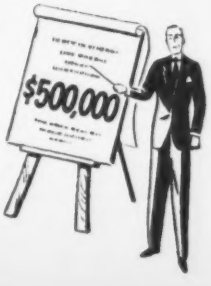
It is part of a long-term program of consumer service sponsored by American Viscose, to give millions of women accurate, sensible information about buying, using, and caring for rayon merchandise.

Published by AVC, "Spinning Rayon Staple on the Cotton System," a 156-page handbook of useful facts, figures, charts and graphs is now being distributed free to technically qualified persons who request it on their business letterheads.

RAYON 20 YEARS AGO

CHICAGO, April, 1928—"It's an ill wind . . . !" Business is booming in rayon umbrellas, thanks to more than the usual amount of rain blowing into the "windy city."

NEW YORK, April, 1928—Plans of the new Rayon Institute for the advancement of the rayon industry include advertising, publicity and consumer educational material. The annual budget is said to be $500,000.



ANOTHER EXAMPLE OF THE *Avisco* 4-PLY SERVICE AT WORK

Witness the new Juilliard rayon gabardine for spring suitings—to which 75% Avisco crimped rayon staple, combined with 25% acetate rayon staple, imparts a new, incredibly soft, light hand. Fiber Research developed Avisco Crimped Staple. Textile Research and Fabric Development showed how to make the best use of it. Converting Relations aided in perfecting the finish. It's another clear example of how the Avisco Service Program leads to finer rayon fabrics.

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middle of the roll should be checked. Bent feed plates are indicated when the points check differently. A No. 5 under the ends and a four-leaf or 34 gage in the middle will prove that the plate is either bent or warped downward in the middle. The condition can be remedied by placing a piece of flat iron under the feed roll. Each end should be fastened with cap screws and dowel pin, and the center should be reinforced, drilled, and tapped for cap screw and lock nut. By screwing this middle screw against the plate, the sag in the center will be pushed up so that it will gage the same as the ends of the roll. The lock nut should be fixed to hold permanently. In the case of 45-in., or wider, cards, two cap screws and lock nuts should be used.

Some mills check for bent feed plates by requiring all card hands to chalk mark all ends down that were not caused by cleaning or creeling. Invariably, they find that the cards with the greatest number of ends down have bad feed plates and rolls.

After correcting the feed-roll journals and bearings, the mill should inspect the lickerin journal and shroud bearing. There are a variety of methods used to recondition these parts. The shafts may be built up and machined down, or new journals may be purchased and installed when the card is reclothed. Self-lubricating-bronze and oil-impregnated-wood bearings are used successfully at these points.

Extensive reconditioning of flat disks is unnecessary, and self-lubricating parts are not needed here. However, many mills overlook one item of improvement on the disks. The hub is often so nearly equal to the length of the bushing that rotation will stop with the least collection of foreign material. It is a simple matter to remove these parts and machine off $\frac{1}{64}$ to $\frac{1}{32}$ in. so that the disks will again turn freely.

At the flat-comb rocker shaft, examine the wear of the bearing and shaft in the stand. Inspect the comb; for, even when used only slightly, it often has badly worn teeth 2 to 6 in. from each end. Examination of the flat-clothing wire will often show that it is bent and damaged at each end and frequently that the clips are gone. Flats are seldom damaged in the center except by tramp iron. Most damage to flats results from loose or poorly maintained bearings at the ends.

During the reconditioning of flat-comb rocker-shaft bearings and while the stand is removed from the card, a good opportunity is given to inspect and possibly overhaul the sprocket shaft and bearings. A self-lubricating sleeve in one piece costs a few cents while a pair of new stands costs $30. It is poor economy to neglect these bearings because they are in one of the most vital positions on the card. They are the setting points for high-quality flat carding and are nearest the points where flat waste-percentages are controlled.

NEGLECTED BEARINGS. The most casual checkup in many card rooms will show worn or neglected bearings with consequent irregularities. For example, the mill may give definite instructions to the grinder for card settings of 0.009 to 0.010 in. Yet, after grinding, stripping, and a few hours of operation, the card may be inspected and the sprocket stands will usually be found at 0.012 in. In such a case, the grinder has usually set them closely as ordered, but upon putting the card in operation decided to open them up. Grinders usually give as their reason that the shaft and bearings are so worn that closer settings would cause the card to become faced.

If the shaft is of the type that uses set screws and keys to fasten the sprockets in place, a new shaft can be made and installed to replace a worn one. A new shaft cannot be installed in this manner if the shaft is one to which sprockets are dowel-pinned. Alignment is difficult to obtain; and usually it is necessary to build up or metallize the shaft, afterward turning it down to size.

On flat drives, it is customary to replaces worn studs and to recondition the bearings with self-lubricated inserts which are pressed in from each end. The pieces create an oil reservoir in the center. At the present time, mills are placing self-lubricating inserts in cast-bronze cylinder bearings, but there is sometimes trouble in getting these inserts into the bronze housing so that the bore is concentric with the outside surface. If one bearing is on-center and the other is off-center, friction will create a hot bearing.

DOFFER-COMB BEARINGS. Many mill men believe that the rattle heard at the front of the card comes from the comb box. Actually more noise comes from the foot-end bearings. Bronze-sleeve bearings may be placed on those foot ends, and this usually requires some building up or metallizing of the shafts. Ball bearings are coming into wider prominence for comb bearings, but they are not new in that application. The writer has one ball bearing which is 30 yr. old. It was taken from a woolen card and is not badly worn. There seems to be no need for excitement over ball bearings for comb bearings on the card; neither is there any reason to fear them.

At the press-calender-roll, some mills

Long ago ...buying valves was simply a question of "how many?"

Long ago, when valve making was in its infancy, all valves were pretty much alike. So no one worried about what *kind* of valves to buy. But because industrial flow control requirements were equally simple, almost everyone was fairly well satisfied.

But not everyone! Because Powell, not content to "let well enough alone," introduced the first regrinding globe valve in 1865 ... and ever since then Powell has been producing "firsts."

And so today, to satisfy the many diverse and complex flow control requirements of modern industry, Powell makes a Complete Line of valves—not only in Bronze, Iron, and Steel, but also in the widest range of corrosion-resistant metals and alloys ever used in making valves.

As a result, there's still no need to worry about what kind of valves to buy—merely consult Powell Engineering.

Fig. 1893—125-pound flanged end Gate Valve with bolted flanged yoke, outside screw rising stem and taper wedge solid disc. 3% Nickel Iron body, bonnet and yoke with alloy trim parts.

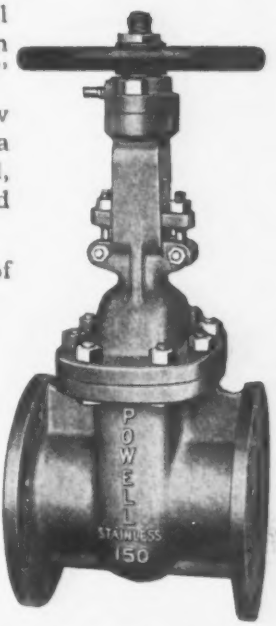

Fig. 2453-G—New, standard 150-pound Stainless Steel Gate Valve with outside screw rising stem, bolted flanged yoke-bonnet and taper wedge solid disc.

The Wm. Powell Co., Cincinnati 22, Ohio

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Fig. 375—200-pound Bronze Gate Valve with screwed ends, inside screw rising stem, union bonnet and renewable, wear-resisting "Powellium" nickel-bronze disc.

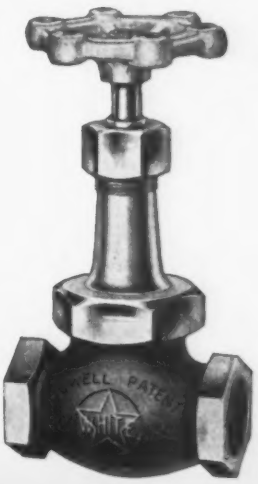
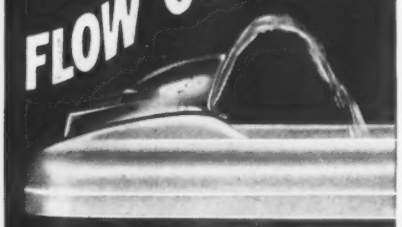


Fig. 1708—200-pound Bronze Globe Valve with screwed ends, union bonnet, renewable, specially heat treated stainless steel seat and regrindable, renewable, wear-resisting "Powellium" nickel-bronze disc.

POWELL VALVES

Dependable
FLOW CONTROL



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have installed spring weighting to condense the sliver and increase can capacity. But it is definitely necessary to limit the pressure at this point, since undue pressure will result in wear on the bottom bearings and journals. Such wear lowers the calender roll, allows the trumpet to rest upon the top roll where, by constant contact, it cuts a groove that will ruin the roll. If these bearings have become worn, they should be replaced or reconditioned with bronze-sleeve bearings; but the shafts should also be replaced and the rolls repaired.

Dyes & Chemicals

Water-Soluble Oils Available in Quantity

Now available in commercial quantities are a number of chemical esters, of an oily character, that are said to dissolve clearly in water. The manufacturer is Glyco Products Co., Inc., Brooklyn, N. Y.

Chemically these products are polyoxyethylene oleates and laurates having a molecular weight above 800. They are non-ionic, non-toxic, light in color, and fluid or grease-like in consistency. They dissolve clearly in water, alcohol, esters, hydrocarbons, and vegetable oils, according to the manufacturer. At 20° C. they are slightly heavier than water. They all have high boiling points and exhibit surface-active properties. The products are produced and sold under the names of Polyethylene Glycol Mono Oleates (S1005) and (S1010), and Polyethylene Glycol Mono Laurate (S1019).

Detergent Scours Wool at 80° F.

Vita-Lastic, a new product said to be capable of scouring wool at 80° F. has been developed by Solvent Products, Inc., Cornwall Landing, N. Y. A saving in steam for heating and a gain in production through a reduced heating-up period is claimed.

Wool to be cleaned is passed through a soda-ash bath (pH 11) for 2½ min., goes through a 2% solution of Vita-Lastic for 2½ min., and is rinsed. Temperature of scouring baths is 80° F.

Tests run in one mill showed a saving of 25 to 35 min. in heating-up time, in addition to a saving in steam resulting from using the 80° temperature instead of the mill's normal 120° F.

Aerotex H Has Static-Eliminating Properties

That Aerotex Softener H can be used as an effective and inexpensive static agent in addition to its use as a softener was recently announced by Textile Resin Dept., American Cyanamid Co., Bound Brook, N. J. Especially suited to nylon and Vinyon N, the agent is said to largely eliminate static development in mill processing.

Brilliant Blue Dye Developed in England

Alcian Blue 8GS, a new, fast, water-soluble brilliant blue dye has been announced by Imperial Chemical Industries, Ltd., Manchester, England. Especially suited for textile printing, particularly on cottons, Alcian Blue is said to give bright turquoise shades not previously obtainable in a dye possessing a good all-around fastness to washing and to light comparable to vat-dyes, Brenthols, and Soledons.

Particulars of the fastness of the new Alcian Blue 8GS were described by the company as follows: Light fastness of a 1½% print against S.D.C. standards is 5 to 6 on cotton and varies from 4 to 5 on other fibers; the shade becomes a little duller, which dullness is removed by washing, resulting in a true tone-in-tone shade the producer states.

By a repeated severe washing test with boiling soap and soda, Alcian Blue 8GS is claimed superior to the average Durindone vat dyestuff, equal to the average azoic combination, but a little inferior to the high wash fastness of the Caledon types. Rubbing fastness is reported superior to that normally obtained by pigment-printing techniques and of the same order as that of azoic combinations. Oxidation fastness is not outstanding. It is sufficient to withstand such oxidation treatment as the class of goods for which it will be used would normally be subjected to. Correctly processed prints are said to be unaffected by reduction; the dyestuff itself in the soluble form is discharged.

The dyestuff is water soluble, and therefore, free from the troubles associated with dispersed dyestuffs and those water-soluble dyestuffs that are sensitive to electrolytes.

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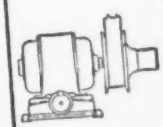
Back of each Lewellen Variable-Speed Motor Pulley is more than 45 years experience in speed-control engineering. Lewellen Variable-Speed Transmissions, Variable-Speed Motor Pulleys and Automatic Controls are in use the country over.



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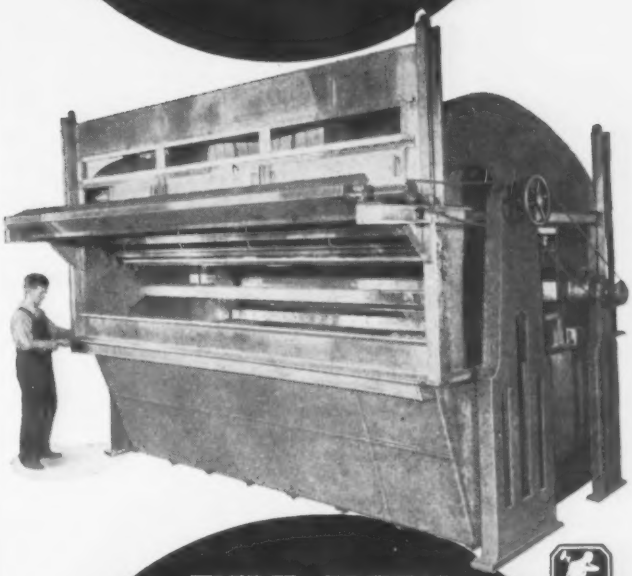

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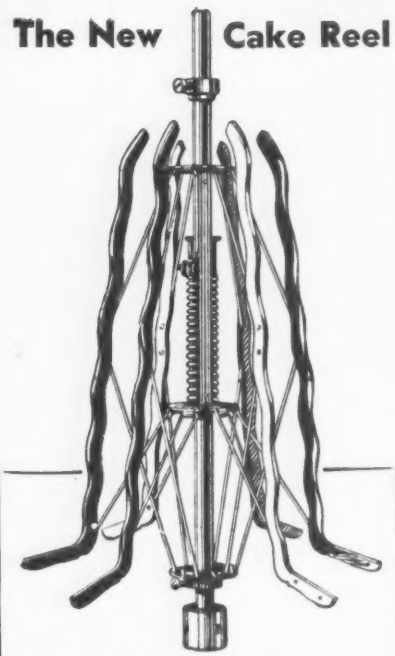

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Books of Interest

Why High Polymers Act as They Do

MECHANICAL BEHAVIOR OF HIGH POLYMERS by Turner Alfrey, Jr.; Interscience Publishers, Inc., New York; 582 pages, $9.50.

This is Vol. VI of the series on high polymers produced under the guidance of an editorial board and published by Interscience Publishers, Inc. The author is assistant professor of polymer chemistry at Polytechnic Institute, Brooklyn, N. Y. His objective is to correlate the mechanical behavior of high polymers with their molecular structure and to uncover fundamental principles underlying that behavior. The polymeric structures have been classified as amorphous, cross-linked, crystalline, and admixed with low-molecular-weight components. A chapter is devoted to each of these types.

The book is largely textile in its content. It considers in some detail the structure and behavior of cotton, wool, viscose rayon, acetate rayon, nylon, saran, the vinyl compounds, etc., and analyzes elasticity, creep, and recovery. The discussion is on a scientific level of interest to fundamental-research men but not readily applicable to problems at the mill-operation level.

Considerable space is devoted to the various types of dash-pot-and-spring combinations which serve as mechanical models for performance of high polymers in fiber form when under stress. Performance is of prime importance, the author points out, since the usefulness of a material is almost entirely attributable to its mechanical properties.

Worsted-Fabric Mill Management

MACHINERY, MANAGEMENT, AND CONTROL IN A WOOL TEXTILE FACTORY by D. R. Williams; Emmot & Co., Ltd,. 31 King St., West, Manchester 3, England; 246 pages, 30 shillings net.

The author is the owner of a worsted weaving plant and he states that the departmental organization described in this book has been followed with success and usefulness in his plant for some years. He has been active in trade associations and in government bureaus and consequently has a broad viewpoint. The book presents department layouts, data on controls, reproduction of tickets and slips, suggestions on forms and record books, and routines for handling orders and materials in the various departments. The author writes of training and wages, employee relations, team-work, etc. He devotes a chapter to discovering, mending, and recording fabric defects. The operations covered start with the receipt of yarn from the spinner. The extensive detail with which the subject is treated makes it likely that any worsted-fabric mill might pick up profitable ideas from this book.

Materials Handling Directory

THE FLOW DIRECTORY; Bolivar Publishing Co., 1240 Ontario St., Cleveland 13, Ohio; 402 pages, $6.00.

This is a reference book for sources of materials-handling equipment, accessories, and supplies. The first 78 pages contain sketches and descriptions of 557 items of equipment to aid in developing a standard terminology for this new and growing field. The body of the book contains manufacturers' catalogs. The concluding sections present a classified index to equipment manufacturers, a list of trade names, and a useful group of engineering and technical data.

Rubber in the Mill

RUBBER IN TEXTILE FACTORIES, by Colin Macbeth; British Rubber Development Board, Market Bldgs., Mark Lane, London EC3, England; 136 pages.

Of the eleven chapters, six are devoted to rubber in power transmission with much practical data on rubber belts. The other five chapters cover rubber in the weave room, in the finishing plant, in yarn handling, for apparel and utensils, and in the new form of rubber-bonded metal, particularly for vibration absorption.

Spinner-Breeder Conference

FOURTH SPINNER-BREEDER CONFERENCE; Delta Council, Stoneville, Miss.; 64 pages.

This booklet presents the proceedings of the conference held Aug. 28 to 30, 1947, at Raleigh, N. C., with the papers given by the various speakers.

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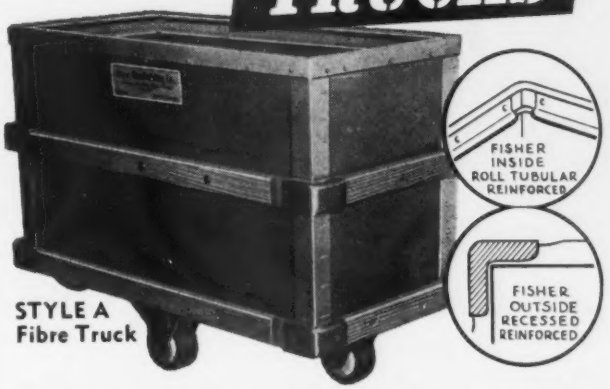

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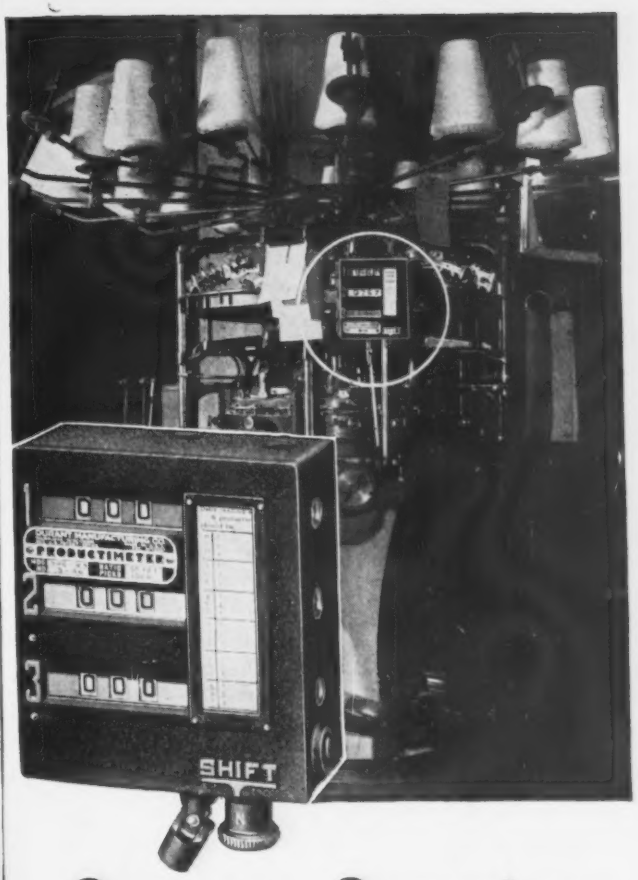

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News of the month

Mission to Japan Returns. The Japanese textile industry will not be able to return to a competitive position for a "long time to come", according to Fred W. Symmes, Greenville, on his return from a textile mission to Japan. "The industry, which operated over 12,000,000 spindles during the war, now operates slightly more than 10% of that," said Mr. Symmes. "Operating now are 1,400,000 spindles with 2,800,000 in place and operable." The completed program of rehabilitation is designed to bring the number of spindles up to a maximum of 4,000,000 in the next three years, he said. These facts are in line with the detailed report on the Japanese textile industry by A. W. Jessup, McGraw-Hill World News correspondent in Tokio, as published in TEXTILE WORLD for January, 1948. Dr. W. P. Jacobs, president, of ACMA, who headed the mission, tendered 16 suggestions for rehabilitating the industry in Japan to the Army authorities. These dealt largely with merchandising the product primarily in Far Eastern markets. Donald Comer, of Sylacauga, Ala., was the third member of the mission.

Oppose Change in Standard Conditions. A group of 35 representatives of the industry met in the Willard Hotel, Washington, D. C., Mar. 4 with representatives of the Federal Specifications Board and National Bureau of Standards. The textile men were unanimous in opposing the proposed change in standard test conditions from 70° F. and 65% r.h. to 73° F. and 50% r.h. Government men offered the changed conditions in order to set a standard which all industries might agree upon. Any change from the long established textile standards would destroy comparability with all past records, the textile men said and involve added cost in many parts of the country by use of de-humidification equipment to reach the lower relative humidity which does not so well represent textile mill and use conditions as does the 65% level.

Textile Calendar

Northern New England Section, AATCC, meetings, Lowell, Mass., Apr. 16, 1948; Andover, May 21, 1948; outing, June 11, 1948.

Hosiery Industry Conference and Annual Meeting of NAHM, Claridge Hotel, Atlantic City, N. J., April 19 and 20, 1948.

American Cotton Manufacturers Association, annual meeting, Roosevelt Hotel, New Orleans, La., Apr. 22 to 24, 1948.

American Institute of Electrical Engineers, meeting on loom and slasher drives, New Haven, Conn., Apr. 28 to 30, 1948.

International Exposition of Textile Machinery, Equipment & Supplies, 71st Regiment Armory, 34th St. and Park Ave., New York, May 3 to 7, 1948.

Cotton Manufacturers Association of Georgia, annual meeting, Daytona Beach, Fla., May 5 to 7, 1948.

Third National Textile Seminar, Shawnee-on-Delaware, Pa., May 10 to 14, 1948.

Southern Textile Association, annual meeting, Ocean Forest Hotel, Myrtle Beach, S. C., May 13 to 15, 1948.

World Trade Week, sponsored by Chamber of Commerce of the U. S., May 16 to 22, 1948.

National Cotton Week, May 16 to 22, 1948.

International Textile Industries Exposition, Grand Central Palace, New York, N. Y., June 7 to 12, 1948.

Committee on Textiles of International Organization for Standardization, first meeting, Bruxton, England, June 7 to 12, 1948.

American Society for Testing Materials, annual meeting, Hotel Book-Cadillac, Detroit, Mich., June 21 to 25, 1948.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1948.

Committee D-13 of ASTM, Washington, D. C., Oct. 20, 21 and 22, 1948.

AATCC, annual convention, Augusta, Ga., Oct. 21 to 23, 1948.

National Association of Textile Machinery Manufacturers, equipment and supply show, Atlantic City Auditorium, Atlantic City, N. J., May 8 to 12, 1950.

Cotton-Textile Mission to England. A good-will mission representing all sections of the cotton-textile branch of the industry left Mar. 27 for Manchester, England, where conferences are being held with selected representatives of the British cotton industry on world problems affecting both industries. The mission comprises delegates from the Cotton-Textile Institute, American Cotton Manufacturers Association, National Association of Cotton Manufacturers, Association of Cotton Textile Merchants of New York, and Textile Export Association of the United States.

Discuss Drives on Slashers and Looms. Problems relating to electric equipment for looms and slashers will be discussed at the meeting of American Institute of Electrical Engineers in New Haven, Conn., Apr. 28 to 30, 1948. Speakers on loom applications will be R. J. Demartini and A. F.

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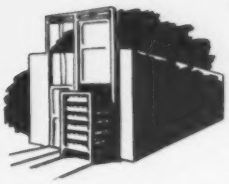

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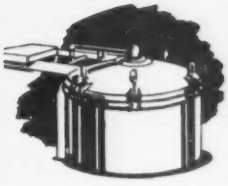

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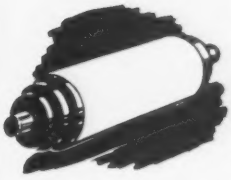

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Lukens, of General Electric Co.; Victor Sepavich, of Crompton & Knowles Loom Works; C. F. Hedlund, of Associated Factory Mutual Insurance Cos. Speakers on slasher drives will be C. E. Center, of Westinghouse Electric Corp.; Frank Rowe, of Dan River Mills; Paul Wentzel, of Uxbridge Worsted Co.

Woolen and Worsted Wages Up. A new wage scale based on a general increase of 15¢ went into effect among woolen and worsted mills of New England and Middle Atlantic states on Feb. 2. The contracts provide for six paid holidays, union shop, improved company insurance and more generous vacations.

Restraint on Rayon Prices. The Washington Administration is trying to practice what it preaches: hold down prices, forego profits, and act in the public interest. Result: Rayon yarn processed by American Bemberg Corp. and North American Rayon Corp. is still selling for several cents a pound less than competitive yarns. Both companies are controlled by the Office of Alien Property which last August seized the majority of the common stock. Both companies now lack a board of directors. They resigned in protest when David Bazelon, assistant attorney general and head of OAP, vetoed a proposed price increase which would have brought their yarn prices up to the new 74 to 75¢ level.

FTC Stands Pat on "Rayon." Federal Trade Commission on Feb. 17 reaffirmed its stand on nomenclature in the rayon field. Henry Miller, member of the commission, stated that "acetate" was unacceptable alone but may be used adjectively with the word rayon.

Pacific Gives Radio Time for Local Projects. As a contribution to the general interests of Greater Lawrence, Mass., which has a population of approximately 200,000 residents, the Pacific Mills has signed a year's contract with radio station WLAW, an affiliate of American Broadcasting Co., which will provide a quarter-hour broadcasting time weekly for use by civic, social, and fraternal organizations and groups in the promotion of projects for the benefits of the communities in the area. Mar. 11 at 7:15 p.m. marked the start of these programs.

Specialty Finishes Discussed. The Northern N. E. Section of AATCC met Mar. 19 at Boston and heard David X. Klein, research director of

Wide World Photos

***RESEARCHERS** at the University of Minnesota, Minneapolis, looking for a use for the flax straw crop of the Northwest which until recently was burned, have developed a method for converting the straw into linen yarn. A chemical process removes gum and other waste material from the flax straw in 30 to 45 min. Dr. I. H. Reyerson, professor of chemistry at the university, says that tests show the linen made from local straw to be equal in strength and quality to European linens. Machines at the university can produce fabric at about $1 a pound. Shown above is a model decorticator built by F. O. Grapp (standing beside machine) through which the flax straw runs prior to degumming.*

Aspinook Corp., Lawrence, Mass., discuss the scope of the finisher in preparing fabrics for the store, the cutter, or the customer. He considered several of the newer specialty finishes in detail. John Boulton, a visiting chemist from the Courtaulds' organization in England, spoke on textile conditions in his country.

CTI Moves. The Cotton-Textile Institute, New York, has moved its offices from 320 Broadway to its new location on the 15th floor of 271 Church St., New York 13, N. Y. Telephone is Walker 5-4004.

New Bedford's 50th. New Bedford Textile Institute, New Bedford, Mass., will celebrate its 50 years of service on May 13 to 15, 1948. R. C. Dick, president and treasurer of Naumkeag Steam Cotton Mills, has been elected general chairman of the golden jubilee celebration committee. The program is woven about the textile institute, the Wamsutta Club, the New Bedford Country Club, and will be highlighted by the golden jubilee banquet May 14. Speakers will be Russell Fisher, president of National Association of Cotton Manufacturers, John

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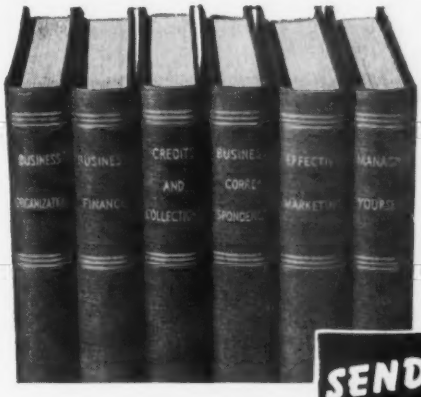

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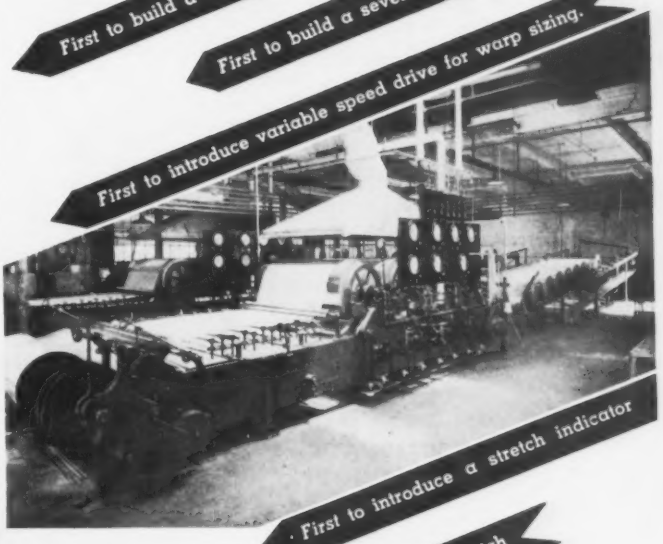

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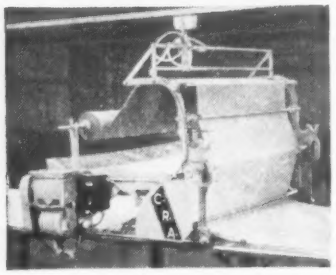
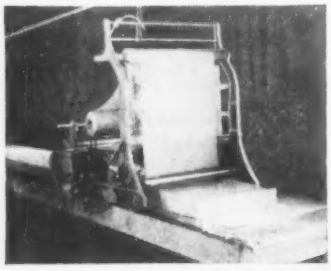


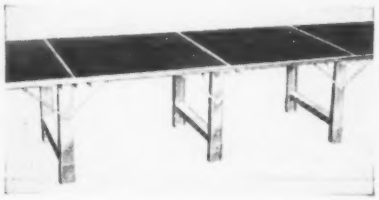
C. R. A. ELECTROMATIC CLOTH SPREADER

Motor driven, push button controlled. For fastest spreading with minimum effort. Handles all fabrics with equal ease. Available with turntable attachment or trailer for pile fabric, etc.



C. R. A. ELECTROMATIC KNIT GOODS LAYING UP MACHINE

Motor driven. Lays up tubular, knitted fabrics with complete naturalness. No pull . . . no stretch. Efficient fabric inspection lights.



C. R. A. ALL ALUMINUM SECTIONAL CUTTING TABLE

Perfectly level, bite proof, warp proof, masonite top. Simple leg adjustment overcomes floor unevenness. Sections easily added or removed. Exclusive "Metaledge" provides extra strength and double protection against warping. Actually helps speed production.

Unusual Demonstration

Textile Machinery Equipment & Supplies Exposition

May 3-7
71st Reg. Armory
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Internationally Represented Cable Address "Cutroom"

Money-Saving Devices for the Cutting Room

J. Desmond, Commissioner of Education of Massachusetts, and Harold B. Sturtevant, vice president of the alumni association.

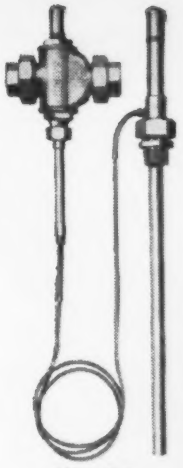
Applies Pure Gold to Fabrics. A process which its designer describes as the first successful method for impregnating fabrics with 24-karat gold is being applied commercially in Los Angeles by the firm of Chan-Gold. Phillip Chandler invented the process by which a thin layer of gold is applied under pressure and heat to even the most delicate fabrics.

AATCC Research Explained. At the meeting of the Southeastern Section of AATCC Mar. 13 in LaGrange, Ga., Dr. H. W. Stiegler, AATCC director of research spoke on that body's research program. He explained that it covered the entire field of wet-processing of textiles, but was clearly divided into two divisions: (1) test methods, procedures, and instruments; and (2) the processing of textiles themselves, involving use of chemicals, dyes, finishes, etc. It is aimed to interest all research-minded members

Survey West Texas as Mill Site. With a grant of $10,000, Texas Technological College at Lubbock has begun a survey of the potentialities in West Texas for the establishment of cotton and woolen mills. Fuel, labor, markets, and availability of utilities will be among factors covered by the survey. The Santa Fe Railway Co. and the West Texas Chamber of Commerce each has made $5,000 available for the project.

Filatex Again Available. Filatex, a prewar brand of elastic yarn, is being made again. Manufactured before the war by Filatex Corp., at Trenton, N. J., it is now being made on a small scale by American Viscose Corp. at its Roanoke, Va., rayon plant. Filatex is a natural latex rubber thread covered with textile yarn, but made only in the finer counts.

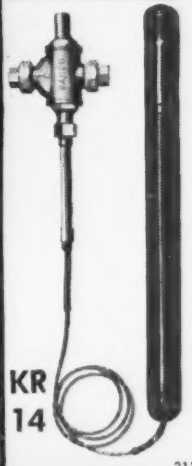
EUROPEAN TRIP begins for C. W. Bendigo (right), editor of TEXTILE WORLD, as he is given a bon-voyage handshake by Edwin D. Fowle, publisher of TEXTILE WORLD. Mr. Bendigo's trip, which ends with a return to the United States about April 27, includes visits to textile centers in England, Belgium, France, Italy, Switzerland, and Germany. The third man is Robert E. Oberholtzer, chief engineer of James Lees & Sons Co., Bridgeport, Pa., who is accompanying Mr. Bendigo on many of his calls on manufacturers and research organizations.



TR-21

SARCO TR-21 operates steam, water, brine and gas valves. Entirely self-contained and self-operated. No electricity, compressed air, etc., needed. Easy to install. For any temperature between 0 and 300° F. Electric controls also available. Catalog 600.

SARCO Temperature Control



KR 14

SARCO KR-14 temperature regulator is a self-operated liquid expansion type control, packless and easy to install. Used for air conditioning, refrigeration, dryers, ovens, ducts and all types of industrial process work. Temperatures 0° to 300°F. ½ to 8". Catalog 600.

211

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Silicates of Soda

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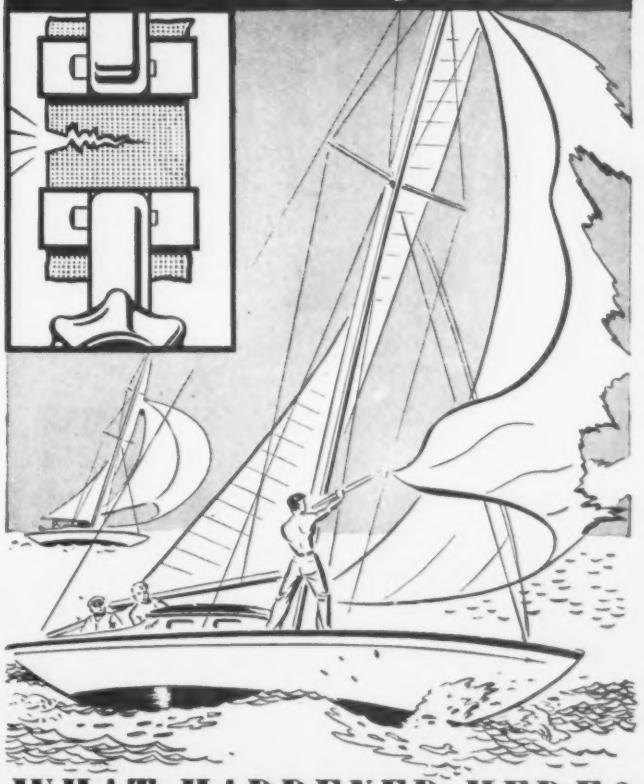
TESTED IS TRUSTED



WHAT HAPPENED HERE?

Model J* Scott Testers perform a wide variety of textile tests up to 500 lbs., on your (single end or skein), fabric, braid, cord, twine. World-standard tests; "picturized" graph results.

"Adequate Testing Always Pays"

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E *is for Economy*

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PABST SALES COMPANY

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Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

NEWS ABOUT Suppliers

Fidelity Machine Co., Inc. has appointed the Southern Mill Equipment Corp., 508 W. Fifth St., Charlotte, N. C., as its sales agent for North and South Carolina, Virginia, West Virginia, and Maryland. Morris Speizman is president of the Southern Mill Equipment Corp., which will now handle Fidelity's complete line including multi-design ribbers, universal ribbers, skein reelers, belt loop cutters, creasing machines, braiders, and 400-needle, electronically controlled, women's nylon seamless hosiery machine.

H. W. Butterworth & Sons Co., Philadelphia, reports sales for the year ended Dec. 31, 1947, as $8,209,163 compared with $6,137,906 for 1946. Net income for 1947 totaled $345,140 as compared with $261,465 for 1946. The company reports that it has unfilled orders on the books totaling $9,000,000.

Carlyle Johnson Machine Co., Manchester, Conn., has appointed W. Arthur Smith, Jr., as engineering sales manager. Mr. Smith lately resigned as New England district engineer for the bearings division of Torrington Co.

Emmons Loom Harness Export Co., Lawrence, Mass., has appointed Matias Gildemeister & Cia., S.C., de R.L., Casilla 2314, Lima, Peru, as agent for Peru.

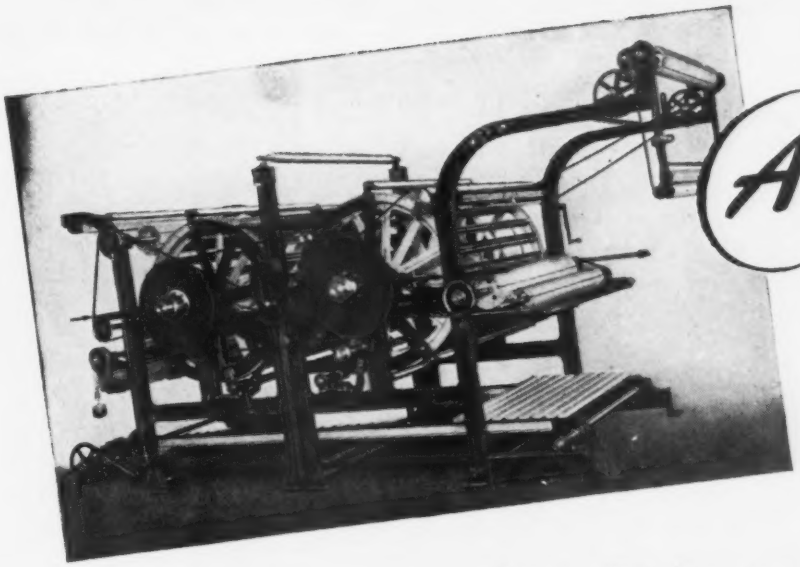
Hunt Machine Works, Inc., Greenville, S. C., is expanding production from 250 rebuilt looms a month to 5,000 looms for the year 1948. Production floor space has been increased from 7,000 to 200,000 sq. ft. A. M. McNeill, with headquarters in Atlanta, Ga., has been added to the sales force to cover Georgia, Alabama, and Mississippi. C. M. McClure, Jr., will be the South Carolina representative with headquarters in Anderson. I. R. Jermyn, Greensboro, N. C., will cover North Carolina and Virginia. W. R. Fox, former representative in the Southeast, has been placed in charge of New England sales, with headquarters in Providence, R. I. Paul Bruchon, a native of France, but a resident in the United States for many years, will be affiliated with the New York office in connection with export sales.

TROWBRIDGE MARSTON, chairman of the board, Kaumagraph Co., Wilmington, Del., has been elected to the presidency of the Chamber of Commerce, Delaware, Inc. When Kaumagraph moved to Wilmington 9 yr. ago, Mr. Marston became active in Chamber of Commerce affairs, first serving on its managing committee and then becoming its chairman in 1944. In 1945, he was elected to the chamber's board of directors. Mr. Marston is an active member of Rotary and is prominent in church and community activities.

Supreme Knitting Machine Co., Inc., Brooklyn, N. Y., has appointed exclusive agents in Palestine and Uruguay as follows: Miron Fainbrun, P. O. Box 1995, Tel-Aviv, Palestine; J. A. Nougreres FCO Araucho, No. 1280 AP. 9, Montevideo, Uruguay, S.A. Supreme now has representation in 31 countries.

Southern Mill Equipment Corp., Charlotte, N. C., has been appointed as distributor throughout the South for George S. Weinerth Machine Co., Reading, Pa., manufacturers of hosiery-inspecting forms and other textile appliances.

National Carbon Co. has announced that the Atlas Electric Devices Co., Chicago, has taken over the manufacture and



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For Your
BROADCLOTHS
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FACE FINISHED GOODS

Large 42" diameter cylinders on Gessner's Double Cylinder Slat Gig give four contacts to the cloth, the most efficient size to keep the teasles properly moist for ideal finishing. In many installations, from three to eight gigs are run in tandem to save gigging time and cloth handling. Among many other improvements, Gessner has greatly simplified changing of slats. We would like to tell you more.

DAVID GESSNER COMPANY Worcester, Mass.

IMPROVED CLOTH FINISHING MACHINERY

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overnight installation . .

drain piping unnecessary . .

draftless uniform distribution . .

floating . . vapor

directional control of . . vapor

reduces cost of . . maintenance

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HUMIDIFIER

Walton Laboratories proudly announces the addition to its standard line of filter protected humidifiers which will readily find its place in the Textile Industry. It is economical . . . easily installed without structural alterations . . . quickly installed without interrupting production . . . Low first cost, low operating cost, low maintenance . . . the New Filter Protective Type Humidifier . . . prompt deliveries.

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sale of the National weathering unit model XIA including repair parts, supplies, and service to present users. Atlas for over 25 yr. has manufactured the Weather-Ometer, Fade-Ometer, and Launder-Ometer. The Model XIA is being remodeled to incorporate the automatic cycling and other control features of the Atlas Twin-Arc Weather-Ometer but is retaining as a light source the National Sunshine carbon arc.

John Waldron Corp., New Brunswick, N. J., has appointed Henry A. Anderson as manager of its Coupling Div. He was formerly an executive in the sales and engineering departments of Ingersoll-Rand Co.

J. & T. Boyd, Ltd. of Glasgow, Scotland, has donated a modern self-doffing flyer-spinning frame to the worsted-yarn laboratory of the wool department at Lowell Textile Institute, Lowell, Mass., through the cooperation of Blake Electric Co., Boston, the American agent. As a tool for research and development, this frame will be useful in comparing yarn characteristics of blended fibers when spun on cap, ring, and flyer systems.

Nylon Div. of E. I. du Pont de Nemours & Co., Wilmington, Del., launched its first national advertising campaign recently. The series, which will be aimed at consumer, industrial, and trade education, will stress the unusual combination of properties existing in nylon textile fibers and their contribution to the performance and value of finished products. Du Pont has organized a Planning Div. in the Ammonia Dept. with Dr. Ralph L. Dodge heading a staff to carry out long-range departmental planning and coordination. This department makes methanol, polythene, chemical intermediates for nylon, and other products of high-pressure synthesis. F. F. Hubach, sales manager in charge of the Philadelphia district office of the Du Pont Rayon Div. has been transferred to the planning section at Wilmington. He is succeeded by A. M. Saunders.

Dyestuffs Dept., Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J., has appointed John Rhodes as a sales representative in the Philadelphia territory. He brings to his new position a background of experience gained in actual work in dyehouses and in the application laboratories of the Calco organization.

***JAMES T. GORDON** has been appointed by Cloverleaf-Freeland Bobbin Co., Hazleton and Honesdale, Pa., as their southern representative. His offices are at 1013 Woodside Bldg., Greenville, S. C. For the last 12 yr., Mr. Gordon has been associated with National Vulcanized Fibre Co., in its New York, Detroit, and lastly in its Greenville, S. C., offices.*

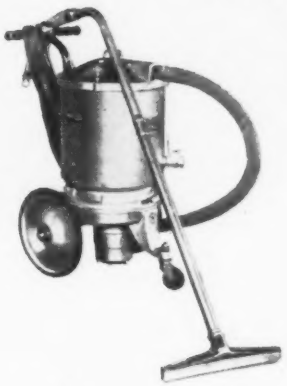
Monsanto Chemical Co., Plastics Div., Springfield, Mass., has appointed Allan W. Low as general superintendent of its new formaldehyde plant. Mr. Low has been employed by the General Chemical Div. of Allied Chemical & Dye Corp. in manufacturing research and administrative capacities for the last 12 yr. Frederick W. Meuschke has been named assistant sales promotion manager of Monsanto's Plastics Div. He has been advertising manager of Rumford Chemical Works, Rumford, R. I., for the last 3 yr. The Monsanto company has established a sales office in Portland, Ore., at 421 Southwest 6th Ave., to handle all Monsanto products.

Southern Alkali Corp., Pittsburgh, Pa., has brought its large liquid chlorine and caustic-soda-producing plant at Lake Charles, La., to capacity production. Constructed by the government during the war to produce critically scarce magnesium metal, the plant has undergone an extensive remodeling during the last 20 months. Southern Alkali is operating the Louisiana plant under a leasing arrangement

ARE dirty Floors A PROBLEM FOR YOU?

If they are then you will be interested in

The Kent Fast Cleaning Team



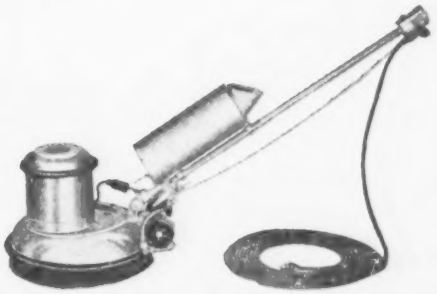
KENT ELECTRIC MOPPER—The machine pictured at the left is the Kent Electric Mopper for water pick-up. It dries floors quickly and cleanly, and removes water from the cracks. Hand labor can not compare with the high efficiency and economy of this modern electric mopper.

* * * * * *

KENT FLOOR MACHINE—The machine pictured below is the Kent Floor Machine used for scrubbing, polishing, steel wooling and light sanding. Made in several sizes.

* * * * * *

The two machines illustrated can be used together as a team, or separately for thorough plant cleaning. The ELECTRIC MOPPER can be converted to a DRY VACUUM.



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Representatives in principal cities

For perfect card grinding

DRONSFIELD'S PATENT MOTOR-DRIVEN FLAT GRINDING MACHINE No. 207

Designed for grinding revolving flats —four simultaneously—dismounted from the cards. Absolute precision in setting is the aim.

Dronsfield's Patent-Traverse Wheel Grinder, No. 120.

Dronsfield's Improved Grinding Roller No. 112.

TRADE MARKS: "ATLAS" AND "DRONSFIELD'S"

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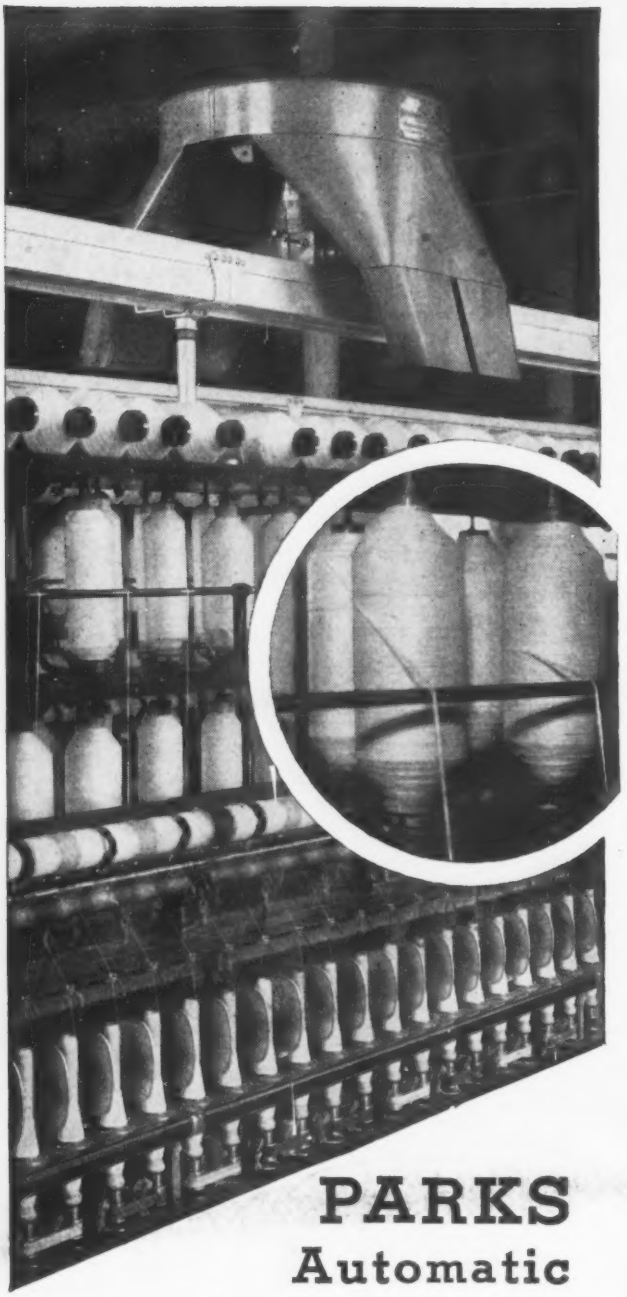

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Automatic
Traveling Cleaners

For spinning, winding, warping, spooling, and twisting. Units travel above the machines and blow them off at regularly fixed periods.

RESULT: Operatives tend more machines with less effort. Investment in Cleaners soon saved by reduced expense of cleaning, by increased production, and by improved quality of product. (Write for details.)

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

with the War Assets Administration. Donald C. Jolly has been appointed as manager of order and service department for Southern Alkali Corp.

Industrial Rayon Corp., Cleveland, Ohio, has appointed Dr. Herman A. Bruson as head of its High Polymer Research Div. Dr. Bruson is noted for his work in the development of Plexiglas.

Esselen Research Corp., Boston—Dr. Gustavus J. Esselen, president of this company, received a golden anniversary honor scroll from the northeastern section of the American Chemical Society on Feb. 12 in recognition of Dr. Esselen's 39 yr. of service to the society and of his contribution to chemical engineering.

Nudex Products Co., Inc., Elizabeth, N. J., has moved its western division office to larger quarters at 505 North La Salle St., Chicago. Operating out of that office, in addition to John W. Van Tuin, divisional sales manager, are George H. Moyer, regional sales manager for the north central region, and Robert A. Peterson, sales representative for the Chicago district.

Sandoz Chemical Works, New York, makers of textile chemicals and dye products, has appointed Walker C. McBeath as demonstrator for textile chemicals in the Boston office. He had several years' experience in American Printing Co., Fall River, Mass., prior to his war service.

Ciba Co., New York—After many years of service, Frederick C. Wittig, manager of the Boston office of the company, retired on Jan. 29, 1948. He entered the employ of the Geisenheimer Co. in April, 1905, went to Boston in 1906, and became Boston manager of the company in 1910. The Geisenheimer Co. subsequently became Aniline Dyes & Chemicals, Inc., which was absorbed by Ciba Co., Inc., in 1921. From February, 1921, to his retirement, Mr. Wittig served as Boston manager and as a director of Ciba.

Harris Research Laboratories, Washington, D. C., has added Thomas Eble to its staff as research associate. He was formerly employed at the National Bureau of Standards. Miss Virginia Giles has joined the staff as laboratory technician. An additional 3,000 sq. ft. of floor space has been acquired to expand present library and machine shop facilities and to accommodate a new physics laboratory.

JAMES R. HILL has been appointed by Corn Products Sales Co., New York, as manager of its Textile Div. in the Atlanta territory. Mr. Hill received a textile degree from North Carolina State College in 1936, and has worked in various departments of a large Greensboro cotton mill.

Morningstar, Nicol, Inc., New York, has consolidated its industrial adhesive manufacturing subsidiaries, Paisley Products, Inc., of Illinois, and Paisley Products, Inc., of New York. Murray Stempel, formerly general manager of the Chicago company, has been elected vice president and general manager of the consolidated operations. Earl C. Lenz, formerly sales and service manager of the Chicago plant, has been promoted to general sales manager. L. J. LaBrie, formerly technical director, has assumed the position of sales manager of the New York plant.

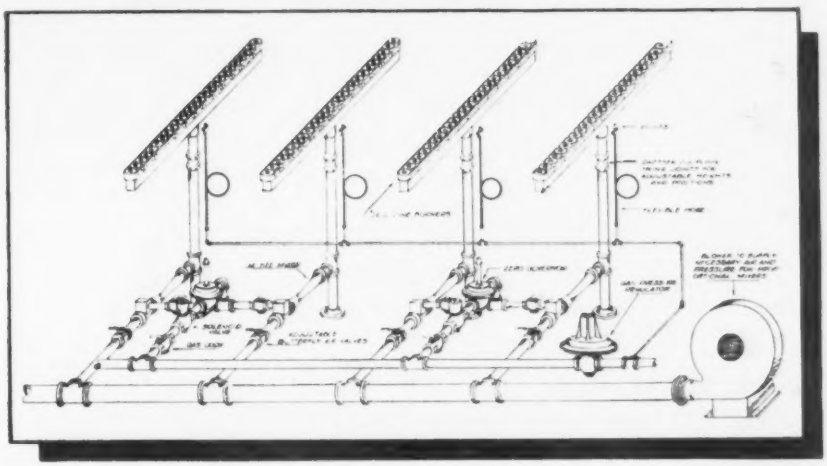
Hooker Electrochemical Co., Niagara Falls, N. Y., has promoted Bjarne Klaussen to vice president in charge of production. He has been a member of the Hooker organization since 1916; works manager of the Niagara plant since 1940, and a member of the company's board of directors since 1942.

Arnold, Hoffman & Co., Inc., Providence, R. I., has promoted Earle D. McLeod to the post of assistant to the president. He has been re-

NEW PLANTS or PLANT MODERNIZATION?

Step Up Your Drying, Curing, and Singeing Operations

30% to 50%



Learn how you can benefit with Radiant Heat—Send your specifications for Burdett's Engineered Recommendations.

BURDETT
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GAS SYSTEMS

Adding more dry cans is actually a costly and "floor-consuming" project. You will get more production out of your textile equipment if you install **Burdett Radiant Heat Systems** NOW. Burdett Systems can be economically and flexibly installed . . . will increase overall production from 30% to 50.%.

Investigate Burdett Radiant Heat for every drying, curing and singeing need of the textile industry. There are **never** any hot spots or streaks in the cloth. Burdett's burner ports cannot clog, heat distribution is always constant. No water cooling of manifold necessary. With completely automatic operation, Burdett Systems are **safe** . . . **adaptable** to varied requirements . . . **low** in fuel and maintenance costs and **high** in output efficiency.

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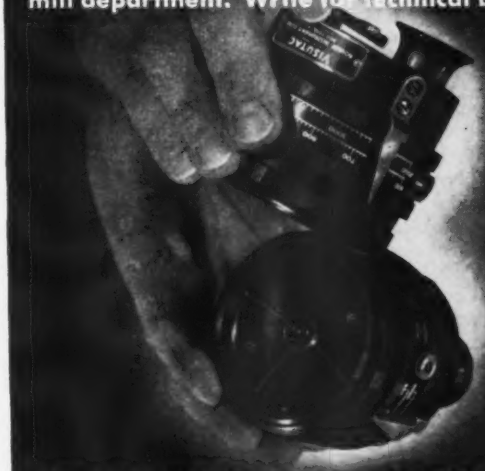
INFRA-RED GAS BURNERS

From any angle Visutac is the ideal stroboscopic tachometer for the textile mill. Equally good for speed reading or observation of cyclic motion such as spindles or needle actions. No contact with moving parts hence no danger — no drag — no thrust bearing wear. Completely portable. Two basic ranges 500 to 8000 RPM/VPM and 1000 to 16,000 RPM/VPM. Priced for use in every mill department. Write for technical bulletin.



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Portable Chronometric and Stroboscopic Tachometers
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For longer part life—assured part protection!

Textile parts recommended for industrial chromium plating include:

Metallic parts subject to frictional wear.

Metallic parts that must be kept clean and free from corrosion.

Rolls of all types, combs, needles, thread guides, tension devices, leash rods, etc.

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WALTON & LONSBURY

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CROSS OFF THESE TROUBLES

~~ROLLED FILLING~~
~~SMUTS~~
~~JERK-INS~~

With WATSON-WILLIAMS Low Thread Groove Shuttles

You can safely leave it to Watson-Williams low thread groove shuttles to remove the serious and common causes of jerk-ins, smutted and rubbed filling. After the filling has been cut, the low groove allows the tail of thread on the outgoing bobbin to lie free, without binding or breaking to be carried back into the cloth on the next pick. Also, the low groove allows the filling to fall slack when picked out from the magazine end, instead of being rolled, or rubbed and smutted by the lower face of a conventional shuttle. Let your Watson-Williams representative show you how to eliminate these difficulties once and for all.

WATSON-WILLIAMS MANUFACTURING CO.
MILLBURY, MASS.

SOUTHERN REPRESENTATIVES: Watson and Desmond, Box 1954, Charlotte, N. C., John W. Littlefield, 810 Woodside Bldg., Greenville, S. C., Walter F. Daboll, Jefferson Bldg., Greensboro, N. C. **WESTERN REPRESENTATIVE:** Arthur J. Bahan, P.O. Box 245, La Porte, Indiana. **NORTHERN REPRESENTATIVE:** Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

search director since 1942, and is succeeded in that position by Chauncey E. Allard, previously research supervisor.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., and the **RCA Victor Div. of Radio Corp. of America,** Trenton, N. J., have jointly established a new arrangement for the distribution of industrial electronic equipment whereby Allis-Chalmers will distribute RCA high-frequency heating equipment and RCA metal detectors in addition to its own regular line of electronic-heating equipment.

The Louis Allis Co., Milwaukee, Wis., has created three new offices. Elected to these new offices are: Louis Allis, Jr., vice president in charge of sales; Frank O. Kovich, vice president in charge of manufacturing; T. R. Wieseman, vice president in charge of engineering. The company has appointed C. G. Skidmore, sales manager.

Mixing Equipment Co., Inc., Rochester, N. Y., has added Edwin D. Lowthian to its field engineering service as senior process engineer.

Brown Instrument Co., Philadelphia—Thirty-four textile instrument engineers from various mills throughout the country have completed the third intensive course in textile industrial instrumentation which has been conducted by Brown Instrument since the war. The course, held at the Brown Instrument School, Philadelphia, included instruction in the operation and maintenance of electronic and other automatic measuring and controlling devices which are being increasingly made a part of textile manufacturing and processing modernization. The course was made available to instrument engineers of Brown customer organizations. O. B. Wilson has been named industrial manager for the eastern sales region of the Brown Instrument Div. of Minneapolis-Honeywell Regulator Co. He will continue to make his headquarters in New York.

General Electric Co., Schenectady, N. Y., has appointed Randolph P. Rice as manager of the industrial division, apparatus department in the New England district. He joined the company in 1924, and will continue to make headquarters at Boston.

***KENNETH B. COVERT** has been appointed by Ansul Chemical Co., Marinette, Wis., as sales manager of its Fire Extinguisher Div. He joined the Ansul organization in 1945.*

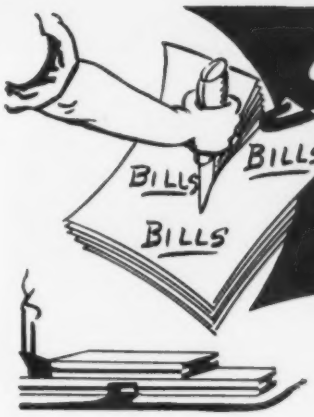
Joseph T. Ryerson & Son, Inc., Chicago, has appointed J. L. McDermott as western sales manager of the Glyco-Ryertex Div., which specializes in the sale of Glycol babbitt metal and Ryertex non-metallic bearings.

Bocon Chemical Corp., New York, has appointed Rohm & Haas Co., of Philadelphia, as selling agent for Boconize, a durable mothproofing compound, in all the United States except New York and New England. That territory is being handled by the Perkins Soap Co., Springfield, Mass.

Towmotor Corp., Cleveland, Ohio, has established fully-equipped service shop devoted exclusively to the maintenance and repair of fork lift trucks, industrial tractors, and fork lift truck accessories, at 111-113 LeRoy St., New York. Occupying a new, two-story building, the shop is equipped to provide complete maintenance and major overhaul service, with factory-trained personnel supervising all operations.

Ballinger Co., Philadelphia, has moved its offices to 121 N. Broad St., Philadelphia 7, Pa.

Link-Belt Co., Chicago, has established a district sales office in Charlotte, N. C., at 617 Johnston Bldg., Thomas H. Appleton, formerly district sales engineer at Baltimore, Md., has been appointed district sales manager in charge of the new office. Link-Belt has removed its Pittsburgh district sales office to the former McKay residence at 5020 Centre Ave., Pittsburgh 13.



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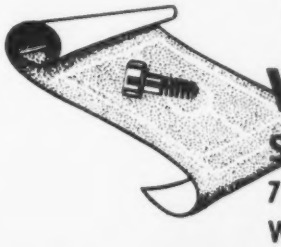

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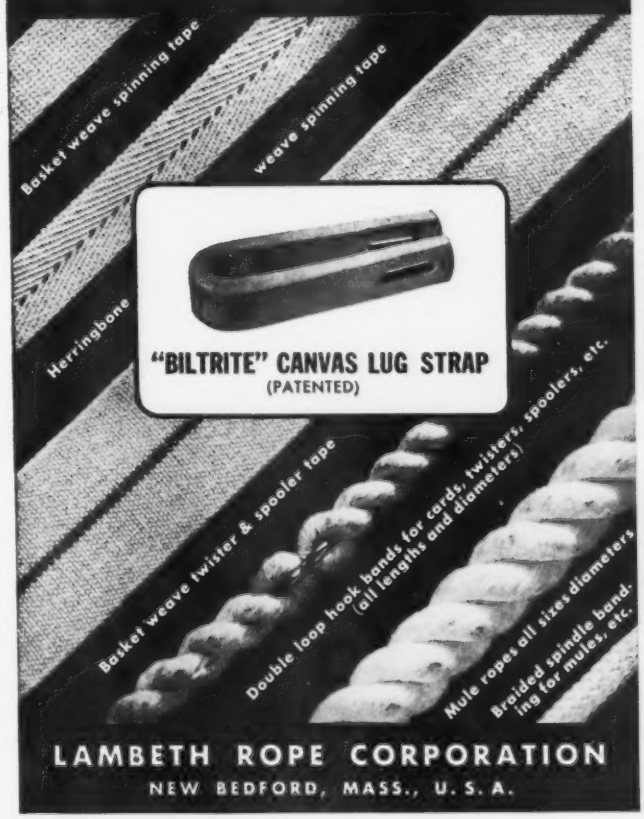
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weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
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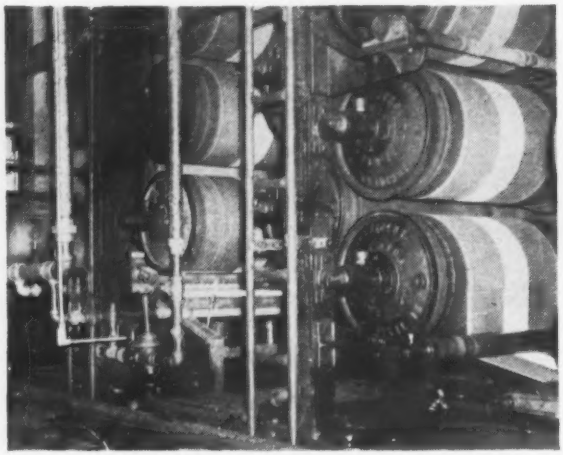

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NEWS ABOUT Mills

Cotton Mill News

Arkwright Mills is establishing second plant at Camp Croft, Spartanburg, S. C., on tract recently purchased for $175,000. About 300 40-in. looms will be installed, and plant will manufacture print cloth or broadcloth from yarns purchased by Arkwright. O. A. Mace will be superintendent.

Bev-Wynn Products Co. has recently been organized; and has taken over former Dottie Lou Mills, Inc., Statesville, N. C., and will reopen. Improvements will be made, and about 4,000 additional spindles with auxiliary equipment will be installed.

Brookwood Mills, Taylorsville, N. C., has expansion program nearing completion. Program included addition which contains 5,500 sq. ft. of floor space, and installation of 2,040 additional spindles and eight combers.

California Shade Cloth Co., San Francisco, Cal., has authorized plans for new two-story mill at San Leandro, Calif., reported to cost $200,000, with equipment. Indenco Engineers, Inc., Oakland, Calif., is engineer and contractor.

Easley Cotton Mills, Easley, S. C., is now wholly owned by Woodside Cotton Mills, Inc., Greenville, S. C., following purchase by Woodside interests of $1,100,000 of outstanding preferred stock.

Eagle & Phenix Mills, Columbus, Ga.—Reeves Bros. Inc., New York, N. Y., new owners, will spend several hundred thousand dollars during the next 2 or 3 yr. to continue expansion program begun by former owners of Eagle mills.

Erwin Cotton Mills Co., Durham, N. C., has approved plans for extensive improvement program for mills and properties that will cost several million dollars. Program will be carried out over 3-yr. period and will include expansion and revamping of Erwin Cotton Mills, Cooleemee, N. C.; air-changing and humidifying equipment in all mill departments requiring it; improvement and modernizing company-owned houses; construction of new cotton offices at Cooleemee and Erwin, N. C.; and installation of new and improved machinery in various departments of company's six mills and two finishing plants.

Dudley Shoals Cotton Mill Co. has been transferred from former owners to Shuford Mills, Inc., Hickory, N. C.

Evangeline Textile Mills Co., Reddell, La., will establish plant that will cost between $1,250,000 and $1,500,000. Operations are expected to get under way by late August or in September. Plant will have enough looms to take care of output of 25,000 spindles.

Fullerton Co., Newnan, Ga., has been organized with A. L. Fuller, J. Smith, and Walter D. Sanders as incorporators. Mr. Fuller is president, and R. T. Smith, formerly with Arnco Mills, superintendent. Company is installing carding, spinning, and winding equipment in new building.

Hollywood Loomcraft, Inc., has taken over plant of former Howard Perry Mfg. Co., Winder, Ga., and is now installing machinery for new mill.

Kilburn Mills, New Bedford, Mass., has brick-work up for receiving building and two loading platforms from plans by Westcott & Mapes, 109 Church St., New Haven, Conn. G. W. Williams, 272 Russell Mills Rd., South Dartmouth, has awarded roofing and sheet-metal contract to Glennon Roofing Co., 39 Linden St., New Bedford.

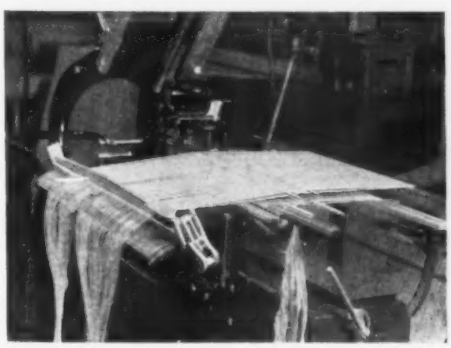
Leading Embroidery Co., which already has plans underway for tobacco-cloth plant, and embroidery-goods plant in Charlotte, N. C., now plans to establish print-cloth plant

BARBER-COLMAN MODEL "LL" *Portable* WARP TYING MACHINE

THIS "UNIVERSAL" MACHINE TIES IN EITHER PLAIN OR LEASED WARPS WITH EQUAL SPEED AND EFFICIENCY

Under the conditions of modern styling, many mills need versatile equipment to handle frequent changeovers between filament and spun synthetic yarns. The Barber-Colman Model "LL" Portable Warp Tying Machine is extremely useful under such conditions because of its adaptability. It is a combination machine, with interchangeable selector mechanisms to select from either an end and end lease or a flat sheet. A trained operator can make the necessary changes in less than ten minutes. The production rate when tying from an end and end lease is the same as when tying from a flat sheet. Under average conditions, a good operator can tie up to 4000 ends an hour, or better. This machine is particularly valuable in mills where both flat and end and end leased warps are coming through, and where the use of separate machines is not justified as they would not be utilized to their fullest capacity.

Barber-Colman Model "LL" Portable Warp Tying Machine set up to tie in new warp from a flat sheet.



The same machine as above, but now loaded for tying-in leased warps, as shown by the lease rods.

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in same city. About $500,000 will be spent on three plants, and installation of machinery has already started.

Pacific Mills, Boston, Mass., has broken ground for Drake Mills Div., Drakes Branch, Va.

Pepperell Mfg. Co., division at Opelika, Ala., has been renamed and in future will be known as Pepperell, Alabama Div.

Pickett Cotton Mills, High Point, N. C., is installing about 2,000 new spindles.

Pomona Mfg. Co., Greensboro, N. C., has begun machine renovation program that is scheduled for completion by early spring.

Rhyne-Houser Mfg. Co., Cherryville, N. C., has made complete analysis of opening-through-spinning departments, assembling processing standards and tolerances to be used for establishment of control laboratory. Werner Textile Consultants, Inc., New York, N. Y., has this assignment.

Robinson Cotton Mills, Ltd., Montreal, Que., has completed buildings for new mill in Woodbridge, Ont.

Russell Mfg. Co., Alexander City, Ala., has work going forward on $500,000 modernization and construction program. Included in project are additions to spinning room, new office building, and additions to plant hospital.

R. D. Sanders Corp., Hazlehurst, Miss., is moving machinery into its new building, and expects to begin operations in near future. City, which erected plant, has agreed to change from garment factory to weaving mill. Plant will run three shifts.

Scranton Lace Co. has purchased United States Lace Mills, Kingston, N. Y., and will continue to operate as complete lace manufacturing unit to be known as Kingston division of Scranton Lace Co. Plant was purchased from J. H. Thorpe & Co., Inc.

Samarkand Rugs, Inc., Rock Hill, S. C., plans one-story addition for expansion in main mill. J. N. Pease & Co., Charlotte, N. C., is architect.

Santee Textile Mills, Bamberg, S. C., will add 896 spinning spindles and 688 roving spindles to its equipment.

Southern Mills, Inc., Atlanta, Ga., has let contract to Christian & Bell Co., Atlanta, Ga., for one-story addition. Robert & Co., Atlanta, Ga., is architect and engineer.

J. P. Stevens & Co., Inc., has purchased approximately 800 acres of land in upper Greenville County, S. C. Purchase is long-time insurance for future development.

Strickland Cotton Mills, Valdosta, Ga., is constructing addition to plant and modernizing present mill structure. Cost is about $139,000.

Townsend Cotton Mill, Anderson, S. C., has been purchased by Eugene E. Stone, of Florence, S. C., and associates. Price was reported as $500,000.

Walmore Mills, Inc., Kings Mountain, N. C., expects to begin manufacture of Turkish towels in near future. New plant, which has leased York Road building owned by Troy Whitehead of Charlotte, N. C., and formerly by Betty Yarn Mill, is installing machinery.

Wennonah Cotton Mills, No. 2 plant, Lexington, N. C., has just completed basement room. Addition provides space for 51 Crompton & Knowles 40-in. looms for cotton dress plaids and tickings.

Wool Mill News

Appleton Woolen Mills, Appleton, Wis., is completing plans for one-story addition to weaving department. Orbison & Orbison, Appleton, is engineer.

Berkshire Woolen Co., Pittsfield, Mass., is planning to build new mill in South, but will continue operations at Pittsfield plant, as heretofore.

Damar Wool Combing Co., Olneyville, R. I., has been purchased by Joseph H. Axelrod, president of Crown Mfg. Co., Pawtucket, R. I., Airedale Worsted Mills, Inc., Lippitt Worsted Mills, Inc., Dorlexa Dyeing & Finishing Co., Inc., Woonsocket, R. I., and Jeffrey Finishing Co., Slocum. Axelrod chain now has control of process from preparation of raw material through finished product.

Dorr Woolen Mills, Guild, N. H., has recently completed 100x200-ft. weave room, and

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Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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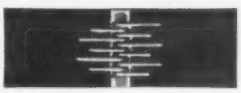

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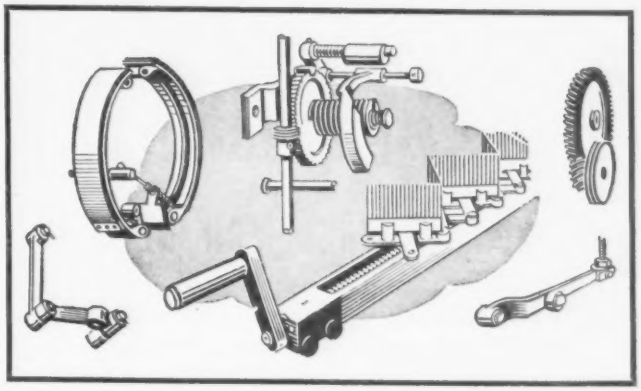

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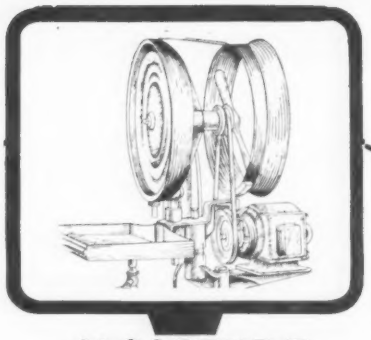

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NOVELTY YARNS

three-story, 70x140-ft. building to house carding, spinning, and finishing rooms.

East Broughton Woolen Mills, Ltd., East Broughton, Que., was totally destroyed by fire recently. Loss was estimated at more than $100,000.

Laconia Worsted Co., Laconia, N. H., has been organized with Albert A. Parmentier, mayor of city and former manager of Guild Northland Mills, as president and treasurer.

Providence Wool Combing Co., Providence, R. I., has awarded contract to Coleman Construction Co., 49 Westminster St., Providence, for two-story addition, 55x100 ft., of brick and steel construction.

Synthetic & Silk Mill News

Altoona Rayon Weaving Mill, Altoona, Pa., has let contract to A. J. Stormer & Son, Altoona, for two-story addition, 115x155 ft. reported to cost over $200,000, with equipment.

Bernson Silk Mills, Inc., Buena Vista, Va., is replacing old looms with newest type automatic equipment.

Burnsville, N. C.—Engineers are now making surveys on site of proposed buildings to house rayon plant for Gant Bros., interests of Glen Raven, N. C. City water line will run to location, and initial unit of plant will be 210x410 ft.

Century Ribbon Mills, Inc., New York, has chosen Newport News, Va., as the site for a new plant. The Peninsula Industrial Finance Corp., subsidiary of Peninsula Industrial Committee, Newport News, is handling all details for financing and constructing the $250,000 concrete building containing 25,000 sq. ft. of floor space.

Copland Fabrics, Inc., Burlington, N. C., has work progressing rapidly on large expansion program. Plant is adding 228 looms and 15,160 spindles that will require more than doubling present number of operatives.

Deering Milliken & Co., which recently awarded contract to Daniel Construction Co., Greenville, S. C., for $4,000,000 rayon plant near Anderson, S. C., plans to have building completed by June. Engineers have surveyed site and grading is now under way. Plant will be 540x300 ft.

Dover Yarn Mill, Inc., Shelby, N. C., has been organized with authorized stock of $250,000. New organization has purchased mill five miles east of town, and will operate as rayon weaving plant.

E. I. du Pont de Nemours & Co., Wilmington, Del., is progressing rapidly on a new $20,000,000 nylon-yarn plant at Chattanooga, Tenn. Work on main structures is essentially complete. Plant is expected to begin initial production in mid-summer, with output being stepped up until capacity operations are reached in 1949.

Duplan Corp., Lincolnton, N. C., spent $1,000,000 in past year remodeling plant, including new addition to building. Combined total of floor space in new and old buildings amounts to 120,000 sq. ft. New building contains 200 looms of latest type.

Flight-Tex Mills, Inc., Pawcatuck, Conn., is installing 20 new looms, and expects the capacity of its new plant to be 40,000 yd. of airplane cloth, plus nylon and Vinyon for sail fabrics and industrial uses.

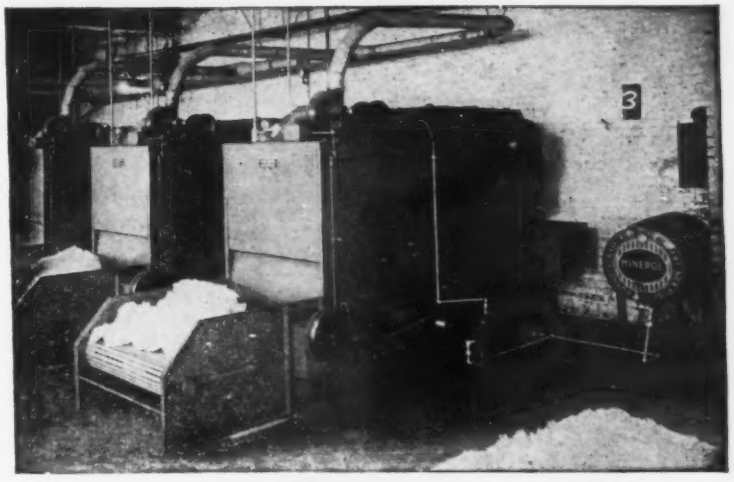
Industrial Rayon Corp., Cleveland, Ohio, is transferring executive headquarters, general office staff, purchasing, production, and engineering personnel to Union Commerce Building.

Normandy Mills, Nashua, N. H., has leased 19,000 sq. ft. of floor space in former Estabrook Anderson shoe factory, for operation of a specialized yarn process.

Paola Mfg. Co., Gaffney, S. C., expects to start operations in near future. It will produce fine fabrics and provide employment for about 300 people. Plant is owned by Hamrick family which operates several other mills in Cherokee county. It will be located in yarn-processing building of former Irene Mills on West Buford St. Company is to be capitalized at $300,000. Officers listed include Lyman A. Hamrick, president; John M. M. Hamrick, secretary; and W. C. Hamrick, Sr., treasurer.

Textron Manville Mill, Manville, R. I., formerly part

MINEROL FIRST and FOREMOST CONDITIONING AGENT for Textile Fibres.



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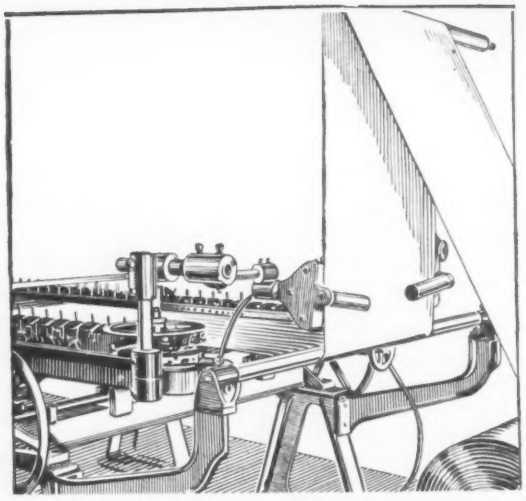
Understand protects yarns like standard starches yet desizes completely in soap and water.

Jim



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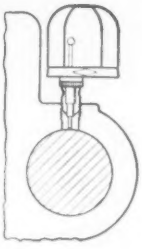

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TRICO FUSE MFG. CO. Milwaukee, Wis.

of Textron, Inc., New York, N. Y., has been sold to Crescent Corp., Fall River, Mass., with Jacob Ziskind, president.

Widder Bros., Lancaster, Pa., plans one-story addition; costs reported over $100,000, with equipment.

Knitting Mill News

American Throwing Co., Griffin, Ga., has installed 25 new circular knitting machines and plans installation of still more to bring total to 62. Company has also put in new sewing machines to bring total to 63, and 40 more are slated to come in near future. Company is also adding to bleaching equipment.

Asheboro Hosiery Mills, Asheboro, N. C., has $150,000 expansion program going forward. Machinery for new addition is now on order and will cost $350,000.

Blossom Products Corp., Allentown, Pa., plans second-story addition to one-story mill, 55x125 ft. Cost reported over $100,000, with equipment.

Browning Mills, Inc., Bridgeport, Ala., has purchased building and will use as knitting mill, after modernizing the unit. Ten new hosiery machines will be installed.

Carrollton, Ga.—J. T. Lawler has begun operation of new hosiery mill near here. Joe Lovbon is superintendent.

Gann Hosiery Mills, Durham, N. C., has completed addition to plant at cost of $150,000. Included in program was installation of 60 new knitting machines for men's hose. Plant formerly operated 160 circular knitting machines.

P. H. Hanes Knitting Co., will establish plant at Salisbury, N. C., to manufacture men's and boys' underwear, sportswear, knit goods, and women's goods. About 250 workers will be employed. Plant will be located on Advance Road, outside of city limits, on 60-acre tract. P. H. Hanes also has purchased 160x100-ft. lot at southeast corner of Sixth and Main Sts., Winston-Salem, N. C. Sale price is reported at $32,500.

R. L. James & Son Hosiery Mill, Marion, N. C., closed for 2½ yr. while Robert E. James was in service, is now operating again. Complete new dyeing equipment has been added.

Huffman Full-Fashioned Mills, Inc., Morganton, N. C., has let contract to Herman-Sipe Co., Hickory, N. C., for one-story addition. Henry I. Gaines, Asheville, N. C., is architect.

Laconia, N. H.—Leonard J. Byers has opened knitting mill in factory building located on Mill St. Plant will manufacture children's hosiery. Albert Pollard is superintendent.

Leininger Knitting Mills, Orwigsburg, Pa., will take bids soon for one-story addition, reported to cost over $75,000. P. G. Knoblock, Pottsville, Pa., is architect.

Largman Gray Co., Philadelphia, Pa., will operate at least 72 54-gage full-fashioned hosiery machines. Finer-gage equipment will be installed later. New plant will probably start operation in March.

M. B. H. Knitting Mills, Inc., Brooklyn, N. Y., has been chartered with capital of $50,000, to operate mill for outerwear production. New company is represented by May Kanton, 4164 Bedford Ave., Brooklyn.

Manikin Hosiery Co., is new name of former B-Z-B Knitting Co., Rockford, Ill. Robert Boehmen is president.

Penn State Underwear Mill, Inc., Allentown, Pa., has let general contract to H. E. Stoudt & Son, Inc., Allentown, for new one-story knitting mill, 60x200 ft., reported to cost over $100,000, with equipment.

Spalding Knitting Mills, Griffin, Ga., is constructing new two-story addition to plant. Structure will be irregular in shape to provide one-story, 90x40 ft. dye house, and two-story facilities for additional office space, box shop, and gray-goods stock room. Company plans additional equipment in dye department. Additional space will be used to expand knitting, looping, boarding, and finishing facilities, and for installation of additional knitting machines.

Standard Hosiery Mills, Inc., Burlington, N. C., which recently purchased Fayetteville Knitting Mills, Inc., Fayetteville, N. C., has plans for long-range expansion program for

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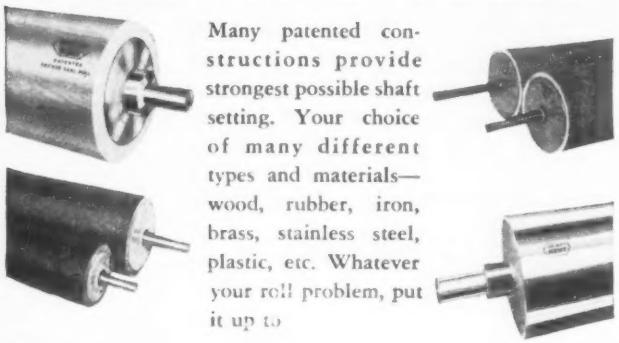

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Fayetteville plant. Additional building space is contemplated, as well as more machinery.

Textron, Inc., plans to increase substantially its capacity for manufacturing nylon-tricot lingerie, and will operate tricot-knitting and warping plant at Willimantic, Conn. Plant, which was built as Roselin Mfg. Co. within past year, is air-conditioned throughout and has sound-proof ceilings. It is equipped with 24 high-speed Reiner tricot-knitting machines.

Valley Knitting Mills, Englewood, Tenn., has been purchased by B. F. Maxwell, of Englewood, and is being liquidated.

Walton Full-Fashioned Hosiery Mill, Dallas, N. C., has been moved to Clinton, S. C.

Dyeing & Finishing Plant News

Acabados, Mexico, S. A., new concern, is now erecting complete dyeing, bleaching, and finishing plant near Mexico City. Plant will have total floor space of about 330,000 sq. ft., and will be equipped with latest-type finishing machinery, much of which will come from United States. Lockwood Greene Engineers, Inc., New York, N. Y., is consulting engineer.

Allegheny Hosiery Finishing Co., Philadelphia, Pa., has been purchased by Louis Kaser and Charles McNeill.

Burlington Mills Corp. finishing plant unit, Dublin, Va. —Installation of new machinery is presently under way and limited operations began at end of March. Power facilities obtained when Dublin properties were purchased last year from War Assets Administration will be utilized in initial operations. B. M. McKeever, is superintendent.

Cranston Print Works Co., Cranston, R. I., has bought 85-acre plant site between Bricton and Fletcher, seven miles north of Hendersonville, N. C., as site for prospective textile finishing plant.

Dixie Mercerizing Co., Chattanooga, Tenn., has awarded contract to Mark K. Wilson Co. for construction and improvement program that will cost about $300,000. Program calls for substantial alterations to present buildings and plants at Lupton City and Ridgedale, and erection of new warehouse at Chattanooga.

Geering Textile Print, Inc., Paterson, N. J., has leased space in former Wright airplane engine plant at Fair Lawn, N. J., and will occupy for expansion.

Judson Mills, Greenville, S. C., is constructing addition between existing buildings for rearrangement of equipment in dye house and utility buildings. Plans were drawn by Lockwood Greene Engineers, Inc., Spartanburg office.

North Carolina Finishing Co., Salisbury, N. C., has completed two-story addition, 70x108 ft.

Sayles Finishing Plant, Inc., Saylesville, R. I., has foundations in for new one-story, 40x50 ft. power plant. Westcott & Mapes, New Haven, Conn., is engineer.

United Merchants & Manufacturers, Inc., Old Fort, N. C., has established one-story finishing plant designed for straight-line processing.

Van Finishing Co., Inc., Hinsdale, N. H., has been established in former Howarth Woolen Mills, Oxford, Mass. Leo Vanarse is owner.

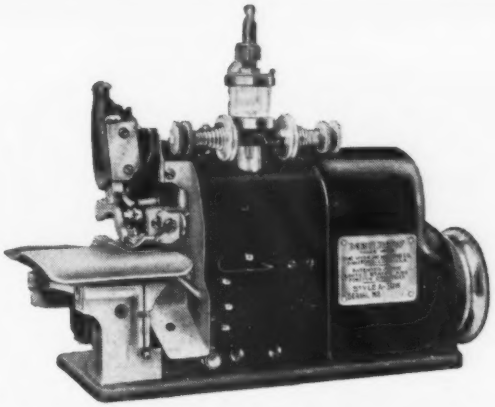
Miscellaneous Mill News

Atlanta Braid Co., Atlanta, Ga., has recently put in 100 new braiders, two new tippers, and two new winders.

Columbia Mills, Inc., Wilkes-Barre, Pa., is completing $200,000 addition to plant at 20-22 East Union St., and is installing four lace machines of English manufacture. The machines weigh 20 tons each. American winding and processing equipment is being installed.

Parker High School, Greenville, S. C., has installed two new Draper looms in weave room where they are being used to teach weaving and loom-fixing to 150 high-school students and 100 veterans taking textile courses. Weave room now has 39 looms in operation. Machinery includes bedspread loom, 10 box looms, a terry-towel loom, and 12 Model K Drapers.

Shannock Narrow Fabric Co., Pawtucket, R. I., has increased capitalization to $300,000, for general expansion.



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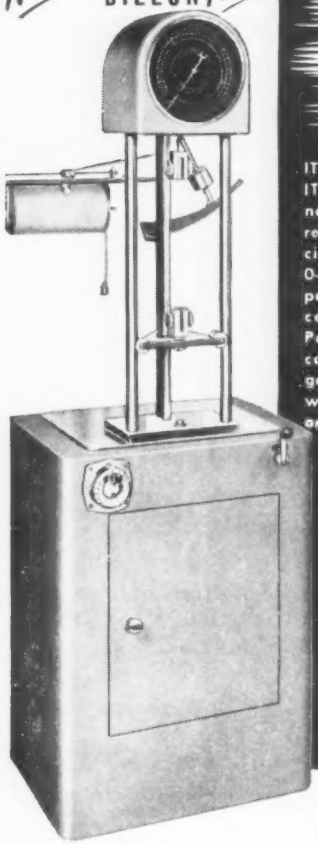

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NEWS ABOUT Men

K. P. Lewis, president of Erwin Cotton Mills, Durham, N. C., since 1932, has been named chairman of the board; and **William H. Ruffin,** vice president and treasurer since 1942, has been named to succeed him. Mr. Ruffin also retains office of treasurer. **Edwin M. Holt** has been made general manager of manufacturing and assistant to **Carl R. Harris**, vice president.

Earl R. Stall has resigned as president of F. W. Poe Mfg. Co., Greenville, S. C., and will devote full time to Florence Mills, Forest City, N. C., and American Spinning Co., Greenville, S. C., which are affiliated with Cone Mills Corp., Greensboro, N. C., of which Mr. Stall is director. **Charles A. Gibson,** president of Calhoun Mills, Calhoun Falls, S. C., succeeds Mr. Stall as president of Poe organization which was recently acquired Ely & Walker Dry Goods Co., St. Louis, Mo.

Ferdinand Thun, president of Berkshire Knitting Mills, Reading, Pa., has been named director of new company that has been formed in Ireland by British and American capital. Contract has been let for erection of new full-fashioned hosiery mill at Newtonards, near Belfast, Ireland. It is understood that Berkshire company itself is not involved with new company.

J. Harold Lineberger has been elected president of Perfection Spinning Co., Belmont, N. C., succeeding his father, the late A. C. Lineberger, Sr.

S. M. Beattie has retired as executive officer of Piedmont Mfg. Co., Greenville, S. C., division of J. P. Stevens & Co. He is succeeded by **R. E. Henry.**

Charles F. Coira, formerly superintendent of Lexington Silk Mill, Lexington, N. C., unit of Burlington Mills Corp., has been transferred to plant at Cuernavaco, Mexico. **Carlisle B. Lewis** succeeds him.

William D. Mahony was elected president, treasurer, and general manager of Faith Mills, Inc., Averill Park, N. Y., at recent meeting of board of directors. **Robert H. McCarthy** was elected vice president, and **Arthur M. Butler,** secretary.

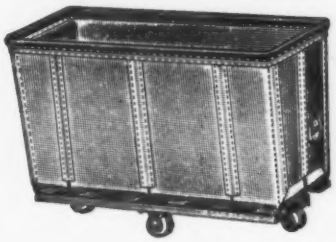
Thomas D. Meriwether has been elected executive vice president of P. H. Hanes Knitting Co., Winston-Salem, N. C. He was formerly vice president and assistant treasurer of company. **P. H. Hanes, Jr.,** assistant secretary and assistant treasurer, was elected vice president; **R. A. Lambertson,** secretary and assistant treasurer, was named secretary and treasurer; **J. D. Long** was elected assistant treasurer; and **E. E. Madrey**, assistant secretary.

F. Ramsay Devereux has been elected president; **James S. Conway,** vice president; **Charles B. Wright,** treasurer; and **Edmund G. Munson, Jr.,** secretary of Oneida Knitting Mills, Utica, N. Y.

A. L. Brown, of Kannapolis, N. C., has been elevated from vice president to president of China Grove Cotton Mills Co., China Grove, N. C., to succeed the late A. C. Lineberger of Belmont, N. C. **John H. Rutledge, Jr.,** also of Kannapolis, has been promoted from assistant secretary-treasurer to vice president.

Harry G. Barnshow has resigned as president and operating superintendent of National Knitting Co., Royersford, Pa., because of ill health. **Norman K. Coker** will succeed him as superintendent.

Crawford H. Greenwalt has become tenth president of E. I. du Pont de Nemours & Co., Wilmington, Del., succeeding **Walter S. Carpenter, Jr.,** who has been elevated to chairman of board following retirement of **Lammot du Pont** from latter post. **Walter J. Beadle,** vice president and director, has resigned as treasurer of company but retains membership on executive committee. **T. C. Davis,** first assistant treasurer,



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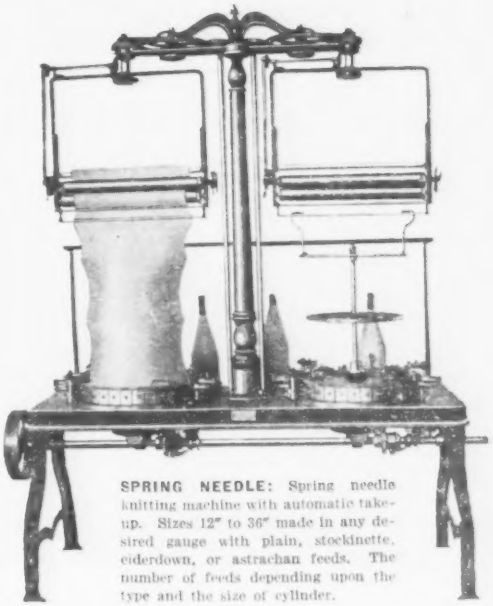

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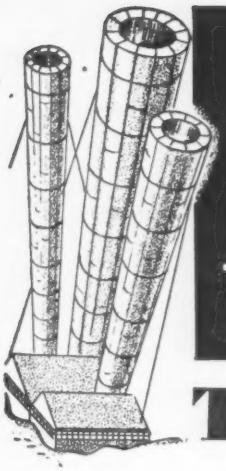

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becomes treasurer to replace him.

Bertram S. Hawkins, formerly president of Merrimack Mfg. Co. and Guerin Mills, Inc., has been elected a director of Dorset Fabrics, Inc., New York, N. Y., to succeed **Frank Kissner,** resigned.

Charles F. Watkins has resigned as vice president and resident manager of plant of United States Finishing Co., Norwich, Conn. **William Covert Filz** succeeds him.

A. C. Lineberger, Jr., has been elected member of board of directors of Crescent Spinning Co., Belmont, N. C., succeeding his father, the late A. C. Lineberger, Sr.

James Wilson has been elected vice president in charge of production at Forstmann Woolen Co. He will be in charge of all manufacturing operations in plants at Garfield and Passaic, N. J. He has been with company since 1920 and in recent years has served as manager of weaving department.

R. T. LeGrand, Jr., has been elected secretary-treasurer of Shelby Cotton Mill, Shelby, N. C. He had previously been secretary and assistant treasurer, with his father holding treasurer's post. His father was re-elected president.

Walter B. Dillard, formerly vice president and general manager of Pomona Mfg. Co., Greensboro, N. C., has been appointed assistant manager of Alabama division of California Cotton Mills Co., Uniontown, Ala. Prior to coming to Greensboro he was vice president and general manager of New Braunfels Textile Mills, New Braunfels, Tex.

Jared J. Mowry, vice president of United States Finishing Co., Norwich, Conn., has been named general manager of company and its subsidiary, Queen Dyeing Co., Providence, R. I. He succeeds **William Myers, Jr.** Mr. Mowry, who is also vice president and general manager of Hartsville Print & Dye Works, Inc., Hartsville, S. C., Southern subsidiary, was also elected director of United States Finishing Co., to succeed **John P. Huntington,** who is retiring because of ill health.

Franklin H. Kissner, Oliver May, and **Elmer Hennig** have been appointed officers of Textron, Inc., Nashua, N. H. Mr. Kissner was named vice president in charge of finance; Mr. May, treasurer; and Mr. Hennig, assistant treasurer. Textron, Inc., is new corporate name of Textron's indirect subsidiary, Nashua Mfg. Co.

Robert J. Reiner has joined Native Laces & Textiles, Inc., New York, in its Research & Development Branch. For the time being, he will also be special assistant to the vice president and general manager, **Walter P. Kuffler** of H. & F. Binch Inc., Glens Falls, N. Y., one of six plants in the group. Mr. Reiner recently relinquished his services with Kidde Mfg. Co., where he was engaged in the development and sales of textile machinery. Prior to that, he was active in his father's firm, Robert Reiner, Inc., in this country as well as abroad.

Hugh G. Chatham has been elected vice president of Chatham Mfg. Co., Elkin, N. C. He is son of **Thurmond Chatham,** chairman of board.

E. J. Siegrist has been elected vice president in charge of all production of Holeproof Hosiery Co., Milwaukee, Wis.

G. Robert Dodson, manager of sweater division, has been elected director of Jantzen Knitting Mills, Portland, Ore.

F. W. Burnett has been elected vice president and director of Vanette Hosiery Mills, Dallas, Tex.

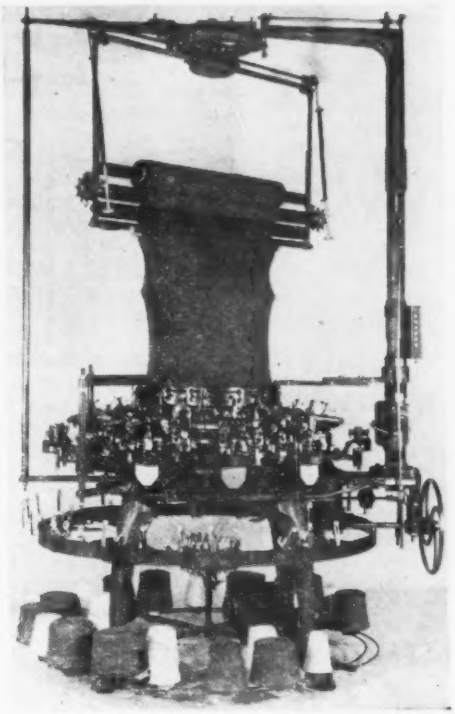
John Marshall Tully has joined staff of Roanoke Mills, Inc., Roanoke, Va., as assistant engineer in charge of production.

Wheaton Kittredge, Jr., has been appointed manager wool combing department of William Whitman Co., Inc., Arlington, Mass., succeeding **M. G. Decatur,** resigned.

Osborne A. Simmons, former plant manager of division of Textron, Inc., Suncook, N. H., has been appointed plant manager of Flightex Mills, Inc., Pawcatuck, Conn.

Robert B. Coleman, Jr., formerly with Industrial Rayon Corp., Covington, Va., has joined staff of Southern Research Institute, Birmingham, Ala.

Arthur C. Young, Jr., former assistant director of standards with Bibb Mfg. Co., Macon,



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The Tompkins Model S-1 is the finest in high speed spring needle knitting machines. Set up at factory for any class of work desired. Feeds and gages may be quickly changed to produce a wide range of cloth —from rugged overcoat material to fine underwear fabric. Furnishing wheels, visual-signal electric stop motion and cylinder lighting insure perfect cloth in large volume. Interchangeable cylinders—16" to 35" and gages from 5 to 50 provide maximum flexibility.

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Trucks

Made any size or style wanted. Center and end wheels. Water proofed and chemically resistant finish.

Self-oiling and no grease can drop on the floor. Used for all kinds of fine yarns, wet or dry.

Bottoms finished 1⅜". Sides and ends finished 1¼", 1⅛", 1" or ⅞", whichever desired. Made from maple, poplar, cypress or fir lumber. WRITE US TODAY

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For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

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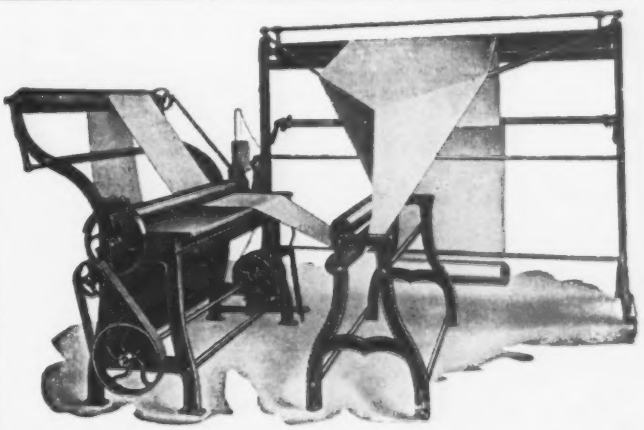

No. 27—IMPROVED DOUBLING AND TACKING MACHINE

Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

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Hampton Durene

the uses of Durene yarns are as limitless as the imaginations of those who style with them

smooth, smooth running Hampton Durene

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TEXTILE MILLS • RAYON PLANTS • KNITTING MILLS • DYE HOUSES
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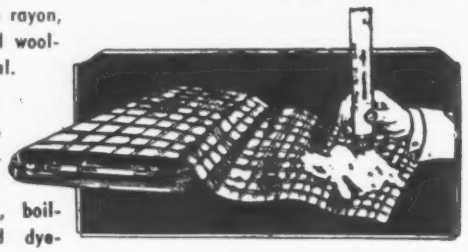
For use on rayon, cotton and woolen material.

Quick and easy to use; inexpensive, permanent, boilproof and dye-resistant.



For Information address

JIFFY TEXTILE MARKER CO.

406 W. School Lane Philadelphia 44, Pa.

NEWS ABOUT MEN

Ga., has now become manager of standards for Newberry Textile Mills, Newberry, S. C.

John W. Rettew, member of purchasing department of Burlington Mills Corp., Greensboro, N. C., will be stationed at Cramerton, N. C., to handle purchasing for Cramerton Mills, Inc., Cramerton; and Modena Plant, Flint Mfg. Co., and Ranlo Mfg. Co., all of Gastonia, N. C.

Roy Playdon has been acting as general superintendent at Hockanum Mills, Rockville, Conn., since retirement of **F. S. Nettleton,** general superintendent.

Herbert C. Rafetto, Jr., has been named manager of plant of Textron, Inc., at Milford, N. H., succeeding **Prentice Shethar,** who has been transferred to the new tricot division of the company.

John B. Humbert, manager of Utica Mohawk Cotton Mills plants in Seneca, S. C., will retire after 46 yr. in textile industry. He has been connected with mills in Seneca for 25 yr.

Herman B. Hunter has left his position in charge of woven-specialties department at Chicopee Mfg. Corp., Manchester, N. H., to become instructor in weaving and design department of Lowell Textile Institute, Lowell, Mass.

P. D. Hutchinson, of Hickory, N. C., and **J. W. Abernethy,** of Newton, N. C., are two new directors who were added to board of Shuford Mills, Inc., Hickory.

Walter G. Regnery has been appointed general manager of Joanna Cotton Mills Co., Goldville, S. C., succeeding William A. Moorehead, who was killed in an airplane accident near Washington, D. C.

Harold T. Merriman, Jr., has been appointed general manager of Airedale Worsted Mills, Inc., Woonsocket, R. I. Mr. Merriman, also vice president and general manager of Lippitt Worsted Mills, Inc., will assume additional duties to assist **Joseph H. Axelrod,** president.

N. Eugene Dye, formerly with Shuford Mills, Inc., Granite Falls, N. C., has been promoted from superintendent to production manager of Lavonia Mfg. Co., Lavonia, Ga. He succeeds the late Douglas F. Williamson.

Donald E. Congdon, of Manville, R. I., is now plant engineer at Ponemah Mills, Taftsville, Conn., succeeding **Thomas E. Reed,** who is now with Merrimack Mfg. Co., Lowell, Mass.

G. J. Sheatt has been appointed to newly-created post of manager of Monarch and Otteray Mills, Union, S. C. Both mills are part of Monarch chain of textile plants.

T. G. Roache, formerly vice president and manager of Raycord Mills, Spartanburg, S. C., will become plant manager of Limestone and Hamrick Mills, Gaffney, S. C.

Lonnie Griffin, general manager for last 5 yr. of Hansley Mills, Paris, Tenn., has resigned.

W. F. Crowder, formerly superintendent of Nelson plant of American Yarn & Processing Co., Whitnel, N. C., has been promoted to general superintendent of both Nelson plant and Spun Fibers, Inc., Lenoir, N. C.

Joseph A. Waugh, formerly night superintendent for Nathan Schwartz & Sons, Philadelphia, Pa., has become yarn superintendent for Corriedale Worsted Co., Inc., Moosup, Conn. He heads up a new spinning department which started up late in March.

Clarence W. Hope has been appointed chief engineer and master mechanic of Conant Houghton Div., of United Elastic Corp., Littleton, Mass. He was formerly chief engineer of Merrimack Woolen Mills, Dracut, Mass.

E. W. Borden, of Taunton, Mass., is now overseer of finishing for Uncas Finishing Corp., Mechanicsville, Conn.

Alfred Caddell has succeeded R. M. Johnson as superintendent at Hendor Mills, Paterson, N. J.

F. C. Warren of Somersworth, N. H., is now superintendent of Sebago Woolen Mills, Bridgton, Me.

R. F. Mills, formerly superintendent of Jefferson Mills, Jefferson, Ga., for 3 yr. has been elected president and treasurer of Gibson Yarn & Weave Mills, Inc., Dallas, N. C.

George B. Morgan, of Val-

dese, N. C., has accepted position as superintendent of Ford's Hosiery Mills, Inc., Hickory, N. C. He was formerly superintendent of Dolly Mills, Inc., at Valdese, N. C.

J. P. Schramm is now foreman of Emple Knitting Mills, Bangor, Me.

K. V. McCaleb, formerly superintendent of United Rayon Mills, Elberton, Ga., has become superintendent of Chicopee Mfg. Corp., Lumite Div., Cornelia, Ga.

Albert McDowell, formerly with Dan River Mills, Inc., Danville, Va., has become head of finishing department of Verney Corp., Peterborough Div., West Peterborough, N. H. **Roy H. Gavitt** becomes foreman dyer, and **William Howarth,** foreman dyer on second shift.

J. T. Millians, formerly overseer in spinning room, has been made superintendent of Arnco Mills, Newnan, Ga. He succeeds **R. T. Smith,** who has joined newly organized Fullerton Co., Newnan, Ga., as superintendent. **Albert Hollaway** succeeds Mr. Millians as overseer. **Travis Itson,** overseer on second shift, becomes assistant superintendent.

Frank Pittman has become superintendent of Gurney Mfg. Co., Prattville, Ala., succeeding **R. J. Adams.**

W. C. Shaw is new superintendent of Majestic Weaving Co., New Bedford, Mass.

Daniel Higgins of Winthrop, Me., is now overseer of finishing for Packard Mills, Webster, Mass.

Jesse M. Jones has become superintendent of Brighton Mills, Inc., Shannon, Ga. He was formerly superintendent of Bath Mills, Inc., Bath, S. C.

Samuel S. Goodhue, of Nashua, N. H., is now overseer of spinning for Pepperell Mfg. Co., Fall River, Mass.

L. W. Hanke, superintendent of Lockport Felt Co., Newfane, N. Y., has resigned to return to Kieckhefer Container Co., Delair, N. J.

J. A. Camp has retired as superintendent of Newnan Hosiery Mills, Inc., Newnan, Ga. He has been with mill since 1918 when it was organized.

Leon Eates has become superintendent of No. 2 unit of Rhodhiss Cotton Mills, Rhodhiss, N. C., succeeding **H. G. Lyon.**

Obituary

Fred A. Carter, 78, president and treasurer of American Textile Woolen Co., Sweetwater, Tenn., died Feb. 17. He was also president and director of Burkart-Schier Chemical Co., Chattanooga, Tenn., and vice president and director of Sweetwater Hosiery Mill, Sweetwater, Tenn.

Peter Ormisdas Sauve, 72, president of the Montreal Cotton & Wool Waste Co., died Feb. 27 at his home at Laval des Rapides. He had been in the employ of that company for more than 50 yr.

Stephen F. Rowell, 69, part owner of Brampton Woolen Mill, died in Newport, N. H., recently.

George B. Birkmann, 65, former partner in Birkmann Knitting Mills, Philadelphia, Pa., and Egg Harbor, N. J., died recently in Philadelphia. Mr. Birkmann was one of three owners of the mills until his retirement in 1927.

Moses T. Stevens, 76, Boston, Mass., vice president of M. T. Stevens & Sons Co., North Andover, Mass., died at his home in Beacon Hill. Mr. Stevens was graduated from the Philadelphia Textile School and became a partner in the textile firm in 1899. He was associated with the company for 50 yr. He was a director of the Stevens Linen Works and vice president and a director of the Open Road Publishing Co.

Philip Cheney, 69, Manchester, Conn., a director of Cheney Bros., died Jan. 21. He was for many years manager of the dressing and spinning departments. He is brother of Clifford Cheney, company chairman.

Donald Brown Osborne, 60, vice president and manager of the Broad River Processing Co., Asheville, N. C., died Jan. 26. An authority on sulphur dyeing, he had been in the textile industry most of his

AMERICAN...the yarn for you, runs more efficiently, produces a finer product, easier to sell...more profitably

American Yarn & Processing Co.

MOUNT HOLLY NORTH CAROLINA

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For Producing Complete Paper or Fabric Labels?

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. . . in rolls
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Accurately—quickly—easily!

Now you can insure against Moisture testing troubles—save time and avoid errors. Moisture Register instruments for the textile industry are accurate down to 0%. They are completely portable and simple to use.

No points to break off or injure material. Determinations are made at the press of a button. Based on the principle of high frequency, power absorption, there's a model to meet your needs.

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"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED

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We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

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WAK INDUSTRIES CHARLOTTE, N. C.

life and prior to going to Asheville he was manager of Sumter Textile Mills, Sumter, S. C., and before that was with American Textile Dye Works, Milwaukee, Wis., for 12 yr. He was a member of the American Association of Textile Chemists & Colorists.

Clarence Stimpson, Sr., founder and president of Stimpson Hosiery Mills, Statesville, N. C., died Feb. 22.

G. Arthur Evans, 70, Thomasville, N. C., textile manufacturer and organizer of several Thomasville textile companies, died Jan. 21. He was a native of Dorsetshire, England, and came to the United States in 1903.

Charles Pfeiffer, 69, who was active in the establishment of Piedmont Plush Mills, Greenville, S. C., and later of Southern Pile Fabric Co., died recently.

John F. Jervis, of Lima, Ohio, who had been in the textile field for 45 yr. died Jan. 21. He was at one time with Rusch & Co., New York, and later was president of Springfield Blanket Mills, Springfield, Tenn.

Neil D. Murphy, vice president and general manager of Mallory Hat Co., died recently in Danbury, Conn.

Arthur M. Howe, retired engineer of Universal Winding Co., Cranston, R. I., died Feb. 15.

Joseph Robinson, 90, former vice president, superintendent, and plant manager of the Lockport Felt Co., Newfane, N. Y., died Jan. 24. He served the company for 42 yr., retiring in 1940.

Arthur Currier, 79, owner of Currier Needle Co., Tilton, N. H., until his retirement 5 yr. ago, is dead. He had also served as a director and sales manager of Acme Knitting Machine & Needle Co., Franklin, N. H.

Wayne C. Mohn, 76, who for 30 yr., until his recent retirement, operated his own hosiery factory in Adamstown, Pa., died recently.

Jacob W. Mack, 72, chairman of the board of Mack Shirt Corp., died Jan. 16.

Fred C. Bryant, field representative for Curtis & Marble Machine Co. of Worcester, Mass., and in charge of their New York office for the last 38 yr., died Jan. 11.

Charles E. Scutt, 55, part-owner of The Wizard Weavers and for 30 yr. a cloth manufacturer in Los Angeles, Calif., died at his home there Feb. 14.

Arthur A. Davenport, 64, for a number of years secretary and superintendent of weaving at Niagara Textile Co., died recently. He became vice president and secretary of Foster Textile Co., continuing until the firm was dissolved.

David Bronstein, 48, owner of Vassar Knitting Mills Co., Brooklyn, N. Y., died in a fire in his plant on Feb. 26.

James T. Fowler, 48, manager of Piedmont Knitting Co., Gordonsville, Va., with which he was associated since 1937, died recently. He had been in the knitting industry for over 20 yr.

Edward J. Venopal, 60, director of sales of Charlottesville Woolen Mills, Charlottesville, Va., since 1933, died in Chicago in February.

Charles L. Windham, 67, retired superintendent of the Manville Jenckes plant at Gastonia, N. C., died Feb. 25.

Euclid Monroe Cooke, 54, manager of the dyeing department of Erwin Cotton Mills plant at Erwin, N. C., died Feb. 14.

Ernest Lorraine Starr, 62, who 20 yr. ago headed Rayon Institute of America, New York, died in Winston-Salem, N. C., recently of injuries suffered when he was struck by an automobile on Nov. 27. He was at one time head of the Durene Association and was first director of the International Silk Guild's promotional campaign.

John H. Thorpe, a founder and secretary-treasurer of Cooley, Inc., Pawtucket, R. I., and a former sales manager for United States Bobbin & Shuttle Co., died Jan. 25 at Providence, R. I.

Carlton H. Talcott, secretary of Torrington Co., needle manufacturers, died recently in Torrington, Conn.

Oscar Haigh Gledhill, 65, superintendent of Ziock Industries, Rockford, Ill., died recently in Peterborough, Ont.

WANTED
TRICOT KNIT GOODS DYER

Must be capable of supervising dye house with Production of approximately sixty thousand pounds per week on both underwear and outerwear fabrics.

Excellent opportunity for the right man. Prominent company. Qualified applicants should submit full information giving experience, age, marital status, and references. *Reply*

P-3768, Textile World
330 West 42nd Street, New York 18, New York

WANTED
CONSULTANT

thoroughly familiar with manufacture of varnished braided insulating sleeving. Fee basis.

P-4287, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED
PLANT SUPERINTENDENT

Knowledge of all mill operations, C&K S-3 and Intermediate Head looms essential. State full particulars.

P-3867, Textile World
330 West 42nd Street, New York 18, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED: MILL Supervisor. Opportunity in major Canadian mill for man who can take charge of department specializing in spun rayon suitings, dress goods and other fabrics made of spun rayon and blends. Must have thorough knowledge in operation of high speed looms and good administrative ability. Housing provided. Inquiries will be kept in strictest confidence. Canadian Cottons Limited, 760 Victoria Square, Montreal, Quebec.

EXPERIENCED OVERSEER wanted for woolen carding and picking operation for second shift in long established company in New England. Successful applicant will be expected to produce results under satisfactory organized working conditions. Good salary. Excellent opportunity. Give complete resume of experience and personal data in first letter. Replies treated in strict confidence. P-3784, Care Textile World.

WANTED FOR a group of South American Textile Mills, graduate Textile Engineer with at least 5 years' practical experience in cotton and spun rayon manufacture. Please state experience. P-4353, Textile World.

WANTED FOR South America, textile designer with practical weaving experience in Cotton and Spun Rayon. Textile college graduate with broad manufacturing experience preferred but not essential. In replying please give background and experience. P-4354, Textile World.

WANTED FOR South America, Carder-Spinner with experience in cotton and spun rayon yarn production. In replying please give training and experience. P-4355, Textile World.

WANTED—BOSS Carder capable of taking complete charge of Card Room. Experience carding asbestos desired but not absolutely required. Salaried. Give experience, age and salary desired. Reply to P-4370, Textile World.

WANTED—COLLEGE graduate, textile or mechanical engineer with textile mill experience to train for jobs as Assistant Manager, Nottingham Lace Mill, Eastern Pennsylvania, starting salary, $5,000. P-4322, Textile World.

SELLING OPPORTUNITY OFFERED

BRADFORD, ENGLAND, firm of wool and noil merchants solicit buying agency for USA mill or importer. Associated firms in Dominions for direct shipments. First class references available. Box 9864, William's Advertisement Office, Kirkgate, Bradford.

EXPERIENCED WOOL BUYER

To start at $6,000. per year, advancement dependent upon ability and results. Must know fleece, territory, Texas wools in grades 48's through 64's. Give background in detail, showing by whom employed, quantities purchased, types of wool bought, etc.

All replies absolutely confidential.

P-4420, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED
BOX DYER

2nd shift, for modern plant in Metropolitan area. Work on Acetates, Rayons, Suitings. State qualifications in first letter. Write

P-4288, Textile World
330 West 42nd Street, New York 18, N. Y.

POSITIONS WANTED

EXECUTIVE: EXPORT experience (sales promotion, traffic, documents, credits, finance), with sales contacts in South America. Near East and Orient; highly developed organizing and analytical ability, with engineering background covering equipment layouts and development, cost and analysis, application of management controls in manufacturing plants; full or part time service available to manufacturer. PW-3715, Textile World.

COTTON SPINNING Technician, 37, would consider carding, spinning, twisting and winding. Also experienced plant erection and personnel training. American and European machinery. Helpful to executive. Latin or Central American countries. Spanish fluently. PW-4044, Textile World.

POSITION WANTED: Young man 33 years of age, with cotton textile degree and 15 years experience in cotton textile mills, would like to train for position of assistant to Superintendent. Can give good reference. South preferred. PW-3922, Textile World.

(Continued on page 302)

TEXTILE EXECUTIVE
Available

Ten Years experience as General Manager of Woolen Spinning, Dyeing and Carpet Weaving Mill.

PW-4204, Textile World
330 West 42nd Street, New York 18, N. Y.

OVERSEER WEAVING
Desires a Change

Age 44—8 Years on Present Job.
Experienced on all Classes of Woolen & Worsted Cloth—Blankets—Woven Paper fabric—Auto Seat Covers—Leno Weaves. Familiar with Creel weaving. Experienced on either C&K or Draper Looms. Prefer the South.

PW-4275, Textile World
520 North Michigan Ave., Chicago 11, Ill.

AVAILABLE
Superintendent-Manager
Fine Woolens

Well balanced background. 7 years in engineering and textile schools. 8 years practical mill experience from wool scouring to finishing. Efficiency engineer - Designing - Superintendent. Presently employed as mill superintendent but will consider change to company with chance for further advancement. Age 37.

P.W.-4310, Textile World,
330 West 42nd Street, New York 18, N. Y.

MEN WANTED

POSITIONS OPEN

SUPERINTENDENT woolen yarn mill; production supervisor for warping and weaving, C. & K. worsted looms, Southern plant; superintendent silks, satins and plain fabrics, Draper looms; shoddy mill manager; full fashioned hosiery mill managers and superintendents $10,000-$20,000 year; woolen mill manager $10,000-$12,000; quality superintendent, rayon acetate fabric mill; superintendent for worsted yarns on cotton machinery; assistant cotton mill manager, So. America; assistant superintendent large worsted cloth and yarn mill; textile engineer, overseer cotton carding and spinning, cotton, rayon designer for mills in South America; industrial engineers.

OVERSEERS for following departments: woolen and cotton carding; worsted yarn carding, combing, drawing, spinning, winding and twisting; woolen carding and spinning combined; cotton knit goods dyeing; lace dyeing and bleaching; shoddy carding; picking, shoddy mill; woolen frame spinning; knitting; worsted spinning; woolen, worsted, cotton and rayon weaving; woolen-worsted finishing $5,000-$6,000 yr.; silk skein dyeing; overseer and fixer for cotton pilot plant (carding, spinning, weaving); boiler foreman, Mid West.

SECOND HANDS for following departments: woolen and worsted raw stock, skein and piece dyeing; woolen and cotton carding; wet and dry woolen finishing; rayon, cotton, woolen and worsted weaving $60-$75; chemists and laboratory men; cost accountants.

FIXERS Brinton and Wildman machines; mechanic for bobbinet lace machines; Universal winder fixer; narrow fabric loom fixer; fixer Draper jacquard looms $85; sewing machine fixers; long chain beamer tender; finished goods perchers and head examiners.

We invite correspondence (confidential) with mill executives seeking new positions and employers seeking new executives.
Over 50 yrs. Confidential Employment Service for Textile Mills.

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(Incorporated)
294 Washington St., Boston 8, Mass.
Liberty 2-6547

LOOM FIXER WANTED
Experienced draper automatics

Pennsylvania Rayon Weaving Mill. Good salary. Apartment available at once. Very cheap rent. Box 7439, 217-7th Ave., New York, N. Y.

WANTED
TEXTILE SUPERINTENDENT

to take charge of small New York Mill. Thorough understanding of dyeing, finishing, starching, calendering of sheetings and print cloths. Knowledge of repairs. Steady position. State experience, salary desired, references, etc.

P-4359, Textile World,
330 W. 42nd St., New York 18, N. Y.

HOSIERY MILL WORKS MANAGER

We need an able Works Manager for a large Northern Hosiery Mill. Must have background as Works Manager or Assistant Works Manager in Full Fashioned Hosiery. Must have Executive and Engineering experience. Age 35-45. Salary commensurate with capabilities. Please write about background in detail. Reply held confidential.

P-4386, Textile World
520 North Michigan Ave., Chicago 11, Illinois

SKILLED HELP WANTED

Axminster carpet plant consisting of 50 looms, narrow and broad, requires thoroughly capable weave boss conversant with threading, winding, setting and production planning. Must be practical on looms. Apply giving full particulars of age, experience etc.

P-4433, Textile World,
330 West 42nd Street, New York 18, N. Y.

Additional Employment & Business Opportunity ads on page 302

POSITIONS WANTED
(Continued from page 301)

OVERSEER OF Weaving wants to make a change thoroughly experienced on all classes of woolen and worsted goods on Drafer or Crompton and Knowles automatic looms. PW-3530, Textile World.

THROWSTER SUPT. Experienced in throwing rayon and silk crepe, rayon crepe, combination yarns, hosiery, schiffli, voile, and rayon organzine yarns, desires position with a reputable throwing concern. PW-4218, Textile World.

THROWSTER: WITH broad experience with all types of synthetic yarns, and raw silk. Available, good references. PW-4319, Textile World.

THROWING SUPERINTENDENT with good records, and good references desires change in locality, preferably South. PW-4320, Textile World.

SELLING OPPORTUNITY WANTED

CAN USE another good line for sale to hosiery and textile manufacturers on a commission basis in North and South Carolina. Address Post Office Box 1933, High Point, N. C.

BUSINESS OPPORTUNITY

Additional Mill Material Sources
sought by Calif. mfr. of children's polo shirts and sweat shirts. BO-4323, Textile World.

WANTED

RESPONSIBLE MILL

MANUFACTURING TUCK STITCH UNDERWEAR FOR LADIES AND CHILDREN BY

- Well established, outstanding sales organization.
- Located strategically in New York City.
- Commanding a tremendous sales volume among retail and chain fields throughout the United States.

B. O.-4132, Textile World **330 W. 42 St., N. Y. 18, N. Y.**

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Our ROWBOTTOM cam cutting facilities are at your disposal for your cam requirements.

Let us have your inquiries.

BLOOMFIELD TOOL CORP.
38 Farrand St. Bloomfield, N. J.

WANTED

TEXTILE PLANT

Large financially powerful diversified organization wishes to add another enterprise to present holdings

CASH PAID

For Capital Stock or Assets
Existing Personnel Normally Retained
Box 1222,
1474 B'way, N. Y. 18, N. Y.

WE NEED

your
Used Textile Machinery
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Complete Units—Odd Lots

JOHN E. FURNANS & SON
488 Pleasant St. New Bedford, Mass.
Ph. 2-4160
"Exporting Exclusively Since 1905"

RAYON & COTTON MILLS

ATTENTION!

If you have any available looms suitable for weaving upholstery and drapery fabrics, we will furnish you with yarn for 50 or more looms on a steady basis. Jacquard or shaft work. Profitable commission weaving arrangement. Give full details regarding type of equipment.

CW-3508, Textile World,
330 West 42nd Street, New York 18, N. Y.

FOR SALE

INDUSTRIAL SITE

- **In heart of Piedmont section of Virginia.**
- **882 Acres on Staunton River at junction main lines Southern Railway and Virginian Railway.**
- **Over 5,000,000 gallons clear creek water per day.**
- **One mile U. S. Highway frontage.**
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RAYON YARN
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Acetate, Viscose, Bemberg 50, 55, 65, 75, 100, 120, 150, 300 Denier. Or will exchange for other yarns

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Modern Top Dyeing Mill equipped with all New Machinery can take 10,000 lbs. a week. All dyeing done on Fredericks System. All Gilling done on Intersecting Gill Boxes. Can handle any shade or color. Fast, courteous service and deliveries.

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One or more 12 spindle Baines Weild

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Long established concern desires a mill to do sizing and weaving on a commission basis.

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Chemicals—Pigments—Oils, Waxes—Solvents Wastes, Residues, By-Products

CHEMICAL SERVICE CORP.

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WANTED

CONING MACHINES

20-30-40-60 Spindle Foster or Universal Coning Machines

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3—SLASHER SIZING MACHINES
6/4 S Head Stock with Cylinders 7' x 5' and one machine having 8/4 S Head-Stock. Apply with full particulars of the machines stating the delivery period to

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Spinning - Weaving - Finishing Unit
Will consider weaving equipment only. Going plant preferred.

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Additional Want Ads on Page 312

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Encouraged by Benjamin Franklin, Philadelphia was the birthplace of the America silk industry (in 1750), and was the first to manufacture cotton goods with power machinery (1764). The first Society to foster and improve the American Textile Industry was organized in Philadelphia in 1775. In 1824 the first Jacquard Loom was used there. Today Philadelphia is the greatest textile producing city in America, leading in clothing, worsted goods, dyeing and finishing.

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1—72" C&M 2-cylinder Brushing machine
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1—80" Butterworth 6 Bowl Calender, 3 Cotton, 3 Brass Rolls
10—40"Platt R.F. Cards
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All "Certified"

1—54" x 60" D&F 2-cylinder iron Shoddy Cards with feeders
1—41½" Knit goods calender stainless steel rolls with motor Reeves drive
1—65" C&M Dewing Machine, motor driven
1—61" P&W Doubling & Rolling-up Machine with clock
1—New 72"x36" P&W Semi-Decater
6—48" V. VL Stainless Steel Dye Jiggs Motor Driven
3—50" Henniken Stainless Steel Dye Jiggs Motor Driven

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6—50" Morrison Dye Jiggs, 3 are Tensionless, 3 Equipped with Stainless Steel Rolls and Dye Tubs
1—Set 23 Butterworth Copper Basket Type Dry Cans 84" Face, 23" Dia. Motor Driven
1—Set 8 Textile Vertical 48"x23" Copper Dry Cans
1—18" Copper Basket Extractor
2—26" Tolhurst Extractors, belt driven
1—32" Tolhurst Copper Basket Extractor
2—48" American Pneumatic Extractors with Copper Baskets Motor Driven
3—60" Tolhurst Copper Basket Extractors

All "Certified"

3—40", 42" E&H Flat Folders with take-up stands
1—Rodney Hunt M3, 2 string fulling mill, belt driven
10—40", 65" card and Napper Grinders
1—83" Roy Napper Roll Grinder
200—40" Draper Model K20 Har Dobby Looms
110—45½" reed space Model E Draper Automatic Looms with lacey tops 3 bank stop motions, warm take-up, belt driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
23—54½" C&K Box 20 & 25 Harness Dobby Looms
2—74" Heavy Duck Looms, roller top
1—New 66" P&W Londonizing Machine
14—82" C&K 2 x 1 automatic Looms, 8 harness cam motion, motor driven
8—92" C & K 4 x 4 Automatic Looms, 8 Harness, Cam Motion, Motor Driven
8—100 C & K 2x2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
6—110" C&K 4 x 4 Box Looms, 25 harness, belt driven

All "Certified"

12—85" R.S. Draper Modified D 16 Harness Looms Motor Driven
1—New 66" P&W AWC Measuring & Winding Machine with Folder and Rolling Attachment
3—66" P&W 60 & 100 yd. Measuring Machines, belt driven
3—60" Measuregraph Machines
1—70" King Gerber Tubing Machine with Veeder-Root counter
1—12 Pole Smith Drum Skein Mercerizer
2—240 Spindle J&B 1¾" gauge Mules
1—392 Spindle Smith 2" Gauge Mule

All "Certified"

2—240 Spindle J&B 2" gauge Mules
100—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors. Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder
1—66" Gessner 16 roll single cylinder Napper

COMPLETE MILL UNIT PROFIT OPPORTUNITIES

- 3—Six to Fourteen Set Woolen Yarn Mills
- A Woolen Piece Goods Finishing Plant
- 3—Worsted Units
- 6—Cotton Mills 3,000-100,000 Spindles 105 Loom Narrow Fabric Weaving Plant for Ribbons, Tapes and Labels, Complete with Warping, Dyeing and Finishing Equipment
- 30 Loom Label Weaving Mill

1—72" Gessner 18 roll single cylinder Napper
3—80" D&F 20 roll Single and double Acting Nappers

All "Certified"

1—30 x 30" Mezzera Wool Opener
1—50" Padder two rubber rolls with barrel expander, motor driven
1—19" Tatham Rag Picker
1—40" H&B Single Process Picker with Eveners, Kirschner Beater, Ball Bearing Beaters with Condenser
9—40" Kitson Breaker Pickers, Finisher Pickers and Single Process Pickers, motorized
2—48" C.D. Sargent Burr Pickers
1—42" Thomas Gadd & Co. 3 color Print Machine
1—43" R.B.F. 3 color Print Machine
6—52", 65½, 66, Voelker and Gessner Single and Double Bed Rotary Cloth Presses
3—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92", 96", and 100" D&F Pin Type Reels, with creel, back stand, neck reed, warp reel beamer and warp compressor
1—60" C&M Single Blade Plush Shear
2—60" P&W Single Blade Woolen Shears

All "Certified"

1—66" Parks & Wilson single Blade Shear
11—66½" P&W 2-blade Shears
1—76" C&M Double Blade Shears
1—80½" P&W Single Blade Shears
1—42" Grand Rapids 20-knife Slitting Machine
3—Lowell 2' cylinder Slashers
1—11½' Butterworth Clip Tenter Frame with 60" Opening with Foxwell Guides. Rebuilt.
1—30' Winsor & Jerauld Tenter Frame, 60" opening, with a Hot Can Unit

All "Certified"

1—60" C&M Single Brush Type Tiger
3—80 Spindle Hopedale band driven twisters 4½" ring, 5½" ga. Belt driven
1—210 spindle Draper Twister, 2" ring
2—8-string Hemmer Wool Washers
1—80 Spindle Foster Tube Winder
7—100 Sp. Foster Model 12 12A-21A Tube & Cone Winders
3—80 and 90 Sp. Foster Model 30 Cone Winders

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1—Palmer Unit 83" face with 10' Pin Clip Tenter Frame
1—Rolling Calender, 90½" face, 4 rolls
1—Palmerette 65" with 30'x60' V.V. Tenter Frame
1—Palmer Unit 87" face with 2 roll Padder, 83" face
1—Padder 66" face, 2 rolls
1—Lincoln Swing Tenter Frame, 70'x60"
1—6 color Print Machine, 48"
1—12 color Print Machine, 48"
1—Rope Washer, continuous Van Vlaanderen G.L.
1—Open Soaper, full width, 3 sets of nip rolls
1—60" Buterworth Padder
1—Pantograph Machine 54"
2—Pantograph Machines, 50"
1—Quetsch, Van Vlaanderen 2 rolls, 54" wide
1—Quetsch 2 rolls, 50" wide
1—Dye Jigg, Rice Barton & Fales 50" roll
2—Dye Jiggs, 2 top rolls, 4 bottom rolls
2—Calender Rolls, 50" Face
1—Semi-Decator, 65" Van Vlaanderen new blanket
1—Semi-Decator, 50" Parks & Woolson
1—Full Decator, 72" Gessner
1—Folder C & M, 70", 3 deck scray
1—Extractor, 60" Horizontal
2—Extractors, Tolhurst 40"
1—Textile Dryer, 23 copper cans 105" wide, horizontal

COMPLETE MILLS

Print Cloth Mill 23,000 spindles
Sheeting Mill 10,000 spindles
Worsted Plant, 6,000 spindles
Woolen Mill 6,000 spindles
Cotton Spinning Mill 27,000 spindles
Cotton Spinning & Weaving 16,000 spindles with 300 Looms
Stafford Loom Plant 252 Looms

CARDING

27—Cotton Cards, 40" H & B
2—Cards 40" Barlow Roller Waste Cards with 2 Whitin Bramwell Feelers
5—Mason Cards, 1925, 40"
2—Worsted Cards, D & F, 60x60
5—Roll Top Cards, D & F, 48x48
3—Woolen Cards D & F, 48x48
150—Card Clothing sets for 40" Cards

WINDING

10—Universal #50 Winders
1—Foster #102-B, 20 spindles
2—Abbott Cone Winders #65, 190 spindles
1—Abbott Cone Winder #64, 180 spindles
2—Foster #101 Winders, wooden cones
2—Abbott #62 Winders
2—Foster #30 Winders, 80 spindles

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8—72" Draper Model D Looms
5—52" C & K 2x1, 20 harness Looms
16—79½" C & K 4x1 auto. motor Looms
12—36½" C & K 4x1 16 harness, belt
1—Ball Waper, 36" Entwistle
1—Twisting Frame, Prince Smith, 80 spindles, traverse 3", gauge 6"
4—Twisters, Prince Smith, 120 spindles 6" traverse, 3½" ring diameter
1—Dry Twister, F & J, 140 spindles, 3½" gauge, 3" ring, motor drive
8—Tricot machines, 28 gauge, complete
1—Woonsocket Slubber 11x5½, 90 spindles
1—Whitin Slubber 12x6, 72 spindles
5—Woonsocket Slubbers, 12x6, 68 spindles motor driven
2—Whitin Intermediates 9x4½, 96 spindles, motor driven
2—Fales & Jenks Spinning Frames, 208 spindles, 2" ring
6—Fales & Jenks Spinning Frames, 192 spindles, 2" ring
28—H & B Draft Spinning Frames, 216 spindles, 2¼" ring
26—H & B Draft Spinning Frames, 240 spindles, 2¼" ring
24—Spinning Frames, 224 spindles, 1⅞" ring

KNITTING

8—Tricot Machines, 28 gauge, complete
2—Wildman Rib Machines, 16 feed, 14 cut, 20"

NEW ROLLING, TUBING, EXAMINING & DOUBLING MACHINES—NEW COPPER AND STAINLESS STEEL DRY CANS TO YOUR SPECIFICATIONS

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3—P.&S. 20"x60" Garnetts, b.b.
1—Four Cyl. Garnett with feeder & breast 30"x60"
1—S. F. 36" Lumper, b.b.
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5—Schofield 18"x30" Waste Pickers
1—Spencer Oiler, swing type
2—Sturtevant Stock Blowers
1—P. & S. 72" Stock Dryer
1—O. L. #20 High Speed Cop Winder
2—Altemus 6" Traverse Drum Spoolers Universal #50 and #90 Winders rebuilt to order.
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1—Sipp Motor Driven 72" Warper
2—Altemus Pinless Warpers, rebuilt to order
1—D. & F. Warper rebuilt to order
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1—Worcester Cone Creel, elec. stop motion
20—C.&K. 82" - 92" 4x4 box Looms, Mtr. Dr.
4—Whitin Mod. "A" 3" ring, 168 sp. Wool Spinning Frames
1—L.&G. Chenille Cutter, rebuilt
2—Hunter No. 10 Fulling Mills
1—Smith-Drum 54" Skein Mercerizer
3—Tolhurst Mtr. Dr. Extractors 72" to 96" baskets.
1—Voelker 66" Vacuum Extractor
10—Halton 1304 Hook Jacquards
2—Royle 600 Hook Card Cutters
1—C.&M. 60" Power Perch
1—C.&M. 5 cyl. Brush
1—P.&W. 66" Double Cloth Shear
2—P.&W. 66" Plush Shears
1—Hermas 58", 4 cyl. Shear
1—Gessner 66" Heavy Duty Press
1—Voelker 65½" Double Bed Press
1—P.&W. AWC Cloth Rolling Machine
1—P.&W. 66" Rolling, Doubling and Measuring Machine
15—Werner Inspection Tables
1—Windle 72" Doubling and Meas. Machine
1—P.&W. 66" 4 cyl. Brush and Sander
1—K.&B. 72" Full Decator

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1—4 CYLINDER TOMPKINS KNITTING TABLE—24" x 11 ft. 2 CYLINDER TOMPKINS KNITTING TABLE—27" x 74" Both have rings for setting of feeds. Now set up for 10 gauge work with 16" diameter cylinders. Will include a lot of extra Burrs, Cylinders, etc. etc. $600.00
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4—Cap Spinning Frames, 200 sp. 3½" ga.
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7—C&K 52" SILK LOOMS WITH MOTORS.

9—C & K 4 x 1 54" Dobby Looms.
6—C & K 4 x 4 20 har. 48" Looms.
50—C & K auto. 56" Looms.
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5—C & K 76" 4 x 1 20 har. Looms.
20—Draper L 90" Sheeting Looms.
45—Fine Double Index 1304 hook Jacq.
18—C & K 82" 4 x 1 Looms.
9—C & K 92" 4 x 1 auto. Looms.
12—C & K 92" Heavy Duty Worsted Looms.
1—P & S Cone Willow.
1—Oswald-Lever Cop Winder.
7—Sipp 90 spindle Winders.
1—Foster #30 Skein to Cone Winder.
1—Foster #25 80 Spindle Doubler.
6—Bottle Bobbin Winders, 80 sp.

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1—Butterworth 50" 3-roll Calender.
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1—Butterworth 3-roll 65" Quetch.
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3—V.V. 2 & 3-roll 50" & 72" Padders.
10—60-gallon Stainless Steel Kettles.
2—30-gal. steam Jack. Tilting Kettles.
1—Acid Ager.
12—Copper Cans, 57½" face, 23" dia.
1—Obermaier Skein Dyeing Machine.
1—Franklin 500 lb. Dye Kettle.
10—Buhlman 60-arm Skein Dyeing Machine.
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2—American Rotary Dyeing Machines 150#.

NEW STAINLESS STEEL CANS— QUICK DELIVERY

2—P & W Double Blade 66½" Shears.
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30—Brinton Flat Bed Knitting Machines.
1—2-Color Laboratory Print Machine.
1—P & W 72" Semi-Decater.
1—Riggs-Lombard Worsted Yarn Conditioner.
1—Parks & Woolson 60" Doubler.
1—Butterworth Pin Tenter Dryer.
1—NEW 61" Spreader.
3—Smith Drum CASCADE Type Dyers, 3 and 7 arms.
1—Proctor & Schwartz Hurricane Dryer.
25—NEW Dye House Trucks.
4—72" Inspection Machines.
1—Franklin 500# Package Dyer.
1—Schick 60" Baling Press.

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1—2-Bowl P&S Scouring machine for wool and worsted skeins, motor driven.
1—Calender machine for finishing and can be used to split tubular cloth.
1—Tubular Cloth folding machine.
1—50" open soaper; 4 compartments and one steam box.
1—3 cylinder 60"x60" all iron card D&F with "New Peralta Unit".
60—Looms—C&K 82"—100"—110" automatic and non-automatic.
3—60"x48" cards—3 cylinders.
6—48"x48" cards—3 cylinders.
5—300 spindle Mules.
1—Print Machine—6-color, Rice, Barton & Fales.

COMPLETE COTTON MILLS

5,000 to 30,000 spindles, long draft and conventional with and without looms.

COMPLETE COTTON SCREEN PRINTING PLANT

4—30 yd. tables
1—Continuous acid ager
And rest of equipment for a complete plant.

DRY CANS

1 set—23 Butterworth Dry Cans, 84" wide, 23" diameter, bucket type, horizontally arranged. Driven by 5 h.p., 3 phase, 60 cycles, 220 volts. Complete with drive having a slip ring; complete set.

DYE JIGGS

16—Morrison Dye Jiggs, all stainless steel, 50" beam, rubber beams, direct motor driven, completely rebuilt in 1943.

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1—2000 spindle worsted.
1—2-set Bradford Worsted Spinning.
1—3-set Card Woolen.
1—1900 spindle Woolen.

PACKAGE DYEING PLANT COMPLETE WITH WARP DYEING EQUIPMENT IN EXCELLENT CONDITION. MAIN ITEMS (ALL OBERMAIER MACHINERY) AS FOLLOWS:

1—500 lb. stainless steel unit, motor driven.
1—600 lb. dyeing machine, motor driven.
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Several sample package machines.

All the above equipped with electric hoist and trolley system.

COMPLETE TEXTILE COATING AND PLASTIC PLANT WITH THE FOLLOWING IMPORTANT ITEMS:

4—Coating machines.
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TEXTILE AUXILIARIES

MACHINERY FOR SALE

1—50" Mercerizing Tenter 50' long 54' wide.
1—75" Loop Dryer 22' long overall width 11'6".
1—Rope Soaper 11' long—Rubber squeeze rolls. Havec Box 4' x 10' 6" with 9 compartments.
2—50' Tenter Frames 50" & 54" wide.
2—48' Hydro extractors Monel Metal Basket 7½ HP Motor 115 Volts D.C.
1—90" Pad. 1 Brass roll 9' Diam. 1 Rubber roll 14' Diam. ⅞" rubber cover, screw & lever pressure.
3—Sets of timed Steel Cans 90", 100" & 120" syphon & Bucket Type.
1—Closed Copper Pressure Tank, 138 Galls.
1—3 Plunger Watson & Stillman Hydraulic Pump.
1—100 KVA Generator, Type ATB 900 RPM 220 V.—3-60.
1—40 H.P. Westinghouse Slip Ring Motor 220 V.—3-60.
1—3 roll Hycock Expander (Brass) with Raising Device.

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1—Butterworth 43" 2 roll Calender, rebuilt, new rolls.
1—VV 50" 3 roll Calender, complete with motor.
3—4 cyl. 48"x48" Cleveland Carus, complete with Cosheko tape condenser.
1—Set of 8 Dry Cans, tinned copper, 50"x23".
1—Set of 37 Copper Dry Cans, 112"x23", Holbrook syphon trap system.
1—10 Fan National Dryer, 91" wide x 40' long x 12" high, rebuilt, complete.
1—500 lb. C. I. Franklin Process raw stock Dyeing Machines.
1—Sipp Eastwood 60" Cloth Folder.
2—6' and 8' solid stainless steel Dye Becks.
1—60" VV Extractor, self balancing, rubber covered basket, top motor drive.
1—P & S 4 cyl. Garnett, #522 Standard, excellent condition.
12—C & K 80" RS 4x1 automatic 25 harness Looms, mtr. driven.
12—Draper Mod. D 72" RS Silk Looms, Motor driven.
12—82" C & K 4x4 Looms, 25 gem heads.
14—C & K 76" RS Terry Towel Looms equipped with 600 hook Jacquards, belt driven 4x1 non-automatic, complete with all accessories.
103—S3 C & K 52" RS shuttle changing 2x1 Looms.
1—#10 Universal Ribbon Quiller, 18 heads.
14—#90 Universal Winders.
20—#50 Universal Winding Machines.
2—40 Spindle Eastwood Quillers.

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1,000,000—Auto. Loom Bobbins, 7"-7½"-8"-8¾"
9,000—Wors. Bobbins, 6" x 3½"-7" x 4"-8" x 4½"-14" x 7"
24,000—Slubber Bobbins 12"-(Saco-Lowell Standard)
3,500—Picker Sticks (new)
2,500—Sweep Sticks (new)
1,000,000—Drop Wires, Mechanical & Electric
5,000—Wors. Spin. Spindles, 20½" x 7/16"
Large Lot Metal Dobby Chain
Lot #50 Universal Winder Parts.

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Send list of any lots of surplus supplies you have to offer. Will pay cash.

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100—M BOBBINS, 8¾" automatic
100—M BOBBINS, 8" automatic
1—BREAST, 60" metallic wire
3—CARDS 48x48, single cyl.
1—CARD, iron, 60x60, 2 cyl.
3—CARDS, iron, 48x48, 3 cyl.
1—CARD, 48x48, 4 cyl.
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4—CONDENSERS, rubb, 48" and 60"
2—CONDENSERS, tape, 60"
1—CLEANER AND OPENER, Buckley blade beater
2—CONDITIONERS, HYGROLIT
1—REDOUBLER, 80 spindles, flyer type
2—DOUBLERS, FOSTER #25
2—DRAWING FRAMES, worsted, 6 spindle
1—DRESSING REEL, 90", pin type
1—FEED CARD, BRAMWELL 48"
1—FEED PICKER 48"
1—GARNETT SHREDDER single cyl. 60"
1—GARNETT 30x60, 4 cyl.
3—GILL BOXES, 2 spindle
57—LOOMS, C&K 4x1, 85", 8 harness
8—LOOMS, C&K 4x1, 92", 8 harness
20—LOOMS, C&K 72" 4x1
1—LUMPER 47", motor driven
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7—MULES 288 spindles to 450 spindles, 2" to 2½" gauge
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1—PICKER, BURR 24"
1—PICKER, WASTE 30"
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1—PICKER, MIXING 48", hopper feeder, oiler, etc.
1—PICKER, MIXING, FEARNAUGHT 48x48, hopper feeder
1—PICKER, RAG, 24" with extra cyl.
2—ROVING FRAMES, WORSTED, FLYER TYPE, 80 and 100 spindles, 8x3½"
25—ROVING FRAMES, WORSTED, 12 spindles ea. 9x4½"
3—SPINNING FRAMES, WOOL, 200 spindles ea., 3" ring
10—SPINNING FRAMES, FLYER TYPE, 200 spindles, 2x4.
6—SPOOLERS, COMPRESSOR TYPE, 32" jackspool
6—TWISTERS, WORSTED, 200 spindles, 2½" ring
8—TWISTERS, WORSTED CAP, 200 spindles ea., 3½" gauge
4—TWISTERS, 120 spindles ea., 5" gauge
1—WARPER 102", HACK STAND, NECK REED, motor driven
1—WARPER, HIGH SPEED, 107", reel, automatic warping creel, motor driven
1—WINDER MODEL 12, 40 spindle, skein attachments
1—WINDER #101, paper cones, 100 spindle
3—WINDERS #30 CONE, 40-100 spindles, late type slub catchers and waxers, motor driven
6—CARDS, COTTON, 40"
1—CLEANER AND OPENER, Buckley Blade Beater
43—COMBERS, 4 sliver lappers, 4 ribbon lappers, D2, 10" coilers
11—DRAWING FRAMES, 12" coilers
7—INTERMEDIATES 9x4½
95—LOOMS, DRAPER E, 40", belt driven
94—LOOMS, DRAPER K, 40", belt driven
24—LOOMS, C&K 47" R.S., 4x1 automatic with dobbies
12—LOOMS, C&K 58" cloth, 4x4, 24 harness
27—LOOMS, C&K 24", 12-25 harness
66—LOOMS, DRAPER E, 42½" cloth, belt driven
12—LOOMS, DRAPER D 43", 25 harness
72—LOOMS, DRAPER K 50", 20 harness
9—LOOMS, Narrow fabric, high frame, 9'6", 32 hook dobby
8—LOOMS, Narrow fabric, 14'7", 28 space circular shuttle loom batten
1—REEL, 29 spindle, 54" skein
4—REELS, 50-100 spindles, 54-72" skein
2—ROVING FRAMES 8x4, long draft, 152 spindles ea.
2—ROVING FRAMES 10x5 long draft, 102 spindles ea.
12—ROVING FRAMES 8x4, 144 spindles ea.
2—SLUBBERS 12x6, 80 spindles ea.
2—SLUBBERS 10x5, long draft, 112 spindles ea.
12—SLUBBERS 10x5, 112 spindles ea.
5—SLUBBERS 11x5½, 72 spindles ea.
4—SPEEDERS 8x3½, 160 spindles ea.
12—SPINNING FRAMES, 224 spindles ea. 2¾" gauge
12—SPINNING FRAMES, 216 spindles ea. 1⅜" ring
10—SPINNING FRAMES, 216 spindles ea. 3½" gauge
15—TWISTERS, 264-280 spindles, 2¼" ring
18—TWISTERS, 224-240 spindles, 1½" gauge
1—TYING MACHINE, STATIONARY NAPPER
1—WARPER 72" horizontal, creel, motor driven
4—WARPERS, BARBER-COLMAN HIGH SPEED with creels

DYEING AND FINISHING

1—AGER 67" with 5-color print machine
1—BATCHER 2-roll, 50"
2—BRUSHES 36" and 54"
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1—CALENDER, tubular knit goods 50"
2—CALENDERS 3-roll 44"
1—CALENDER 2-roll 48"
1—CALENDER 3-roll 100"
1—CALENDER, HYDRAULIC 2-roll 50"
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1—COTTAGE STEAMER 16' x 7'6" capacity 1500-1800 yards
1—SET 21 COPPER DRY CANS 101" x 23" diameter
1—SET 22 COPPER DRY CANS 120" x 23" diameter
1—SET 6 COPPER DRY CANS 72" x 36" diameter
1—SET 21 TINNED STEEL DRY CANS 74" x 23" dia.
1—SEMI-DECATUR 72" x 12" dia. cyl., pump, motor, blanket
1—DOUBLER 72", motor driven
1—DRYER, NET 90"
1—DRYER, LOOP 84"
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1—DRYER, SKEIN truck type
1—DYE KETTLE 6' SS.
7—EXTRACTORS 26" to 60", copper baskets, belt and motor driven
1—EXTRACTOR, VACUUM 70", pump and motors
1—FOLDER 50", 1¼ yd., motor driven
1—FOLDER 60" adjustable, 1 yd. and 1¼ yd., motor driven
1—FULLING MILL #20, double compartment, SS lined, motor driven
1—FULLING MILL, sample type
1—ROLLING TEASEL GIG 11 4, 1350 spindles, 100" cloth
1—GRINDER NAPPER, adjustable 60" to 120"
1—INSPECTING AND REWINDING MACHINE 46"
8—JIGGS 48" to 66" SS lined
1—MEASURING AND ROLLING MACHINE 42"
4—NAPPERS 64" to 90" double acting
3—NAPPERS knit goods, 20-roll, 80"
1—NAPPER 100" S.A. 12-roll, gear driven
1—PALMER 64½" x 60" dia., motor driven
4—PRESSES, ROTARY, 66½" to 86", double bed
1—PRINT MACHINE 5-color, 76" complete, W bore
1—PRINT MACHINE 42", 3-color
1—QUETCH, 2 rubber rolls, 60", motor driven
1—SEWING MACHINE, Railway 72", motor driven
8—SHEARS 45" to 104", single and double blade
1—SINGER, 2-burner, 48"
1—TENTER FRAME, PIN 30' x 66", motor driven
1—TIGER SHEAR 70"
2—TUBERS 50" and 60", motor driven
4—WASHERS 6' log rolls
1—SCOURING UNIT 2-bowl, 72" raw stock
1—SCOURING UNIT 2-bowl 36" with 72" raw stock dryer
1—SCOURING UNIT 2-bowl, skein

1 PACKAGE DYEING UNIT.

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8—Model #60 Universal wooden Cone Winders, 96 spindles each.

2—Model #101 Foster wooden Cone Winders, 80 spindles each.

98—Sets new Draper Motor Drives for model E looms & ¾ HP GE motors.

150—C & K 16-20-harness Double Index Dobbies with arches.

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Wheel 92"x85", Reinforced condensers and leasing device, Warp mill and take-up beam on separate drive, beam stand will take 17" head and 72" overall. Equipped with lease clock, beam stand reinforced for heavy work. Motor to mill, G.E. 220 Volt, 60 Cycles, 3 phase, 1½ H.P. 1735 R.P.M. Beam Motor direct drive, G.E. 220-440 volt 60 cycles, 3 phase, 3 H.P. 1730 R.P.M. 67" traverse.

SIPP-EASTWOOD MAGAZINE TRANSFER CREEL

1624 working ends. 1624 reserve ends, spindles on 5" centers. Individual electric stop motion with indicators. Bobbins have slot for transfer tail.

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Plush Weaving Mill

12 C & K Gemhead looms,

Good working condition, 2 beaming frames, 2 Universal winders, brushing and shearing machine. Excellent buy. Quick sale.

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DRAWING FRAMES

Five Whitin drawing frames, four deliveries each, total of twenty deliveries, 12" coilers, 36" can table, 1⅜" diameter front rollers, steel top rolls, Model F, 1919 year.

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Almost NEW 3 COCKER 11 DRUM SLASHERS

USED ONLY 16 MONTHS

60" Wide 30" Diameter Drums

STAINLESS STEEL DRUMS, 5 BEAM TAKE UPS DOUBLE QUETSCH, RELIANCE SINGLE MOTOR VARIABLE SPEED DRIVE 15 HP., 1150 RPM. TAYLOR INSTRUMENTS AND PIPING. SPECIAL REEDS 1½" WIDE, JOHNSON JOINTS BEARINGS AND FLEXIBLE TUBING.

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1 REINER WARPER

Rebuilt Direct Beam Warper with Reed Stand. Individually motorized with 2 H.P. 220 volts motor. Electro bars and automatic stop motion attachment. Can be run from magazine cone creel or V creel. Creel available.

2,000 AUTOMATIC 6 PIN AND 4 PIN FLETCHER LETOFFS—COMPLETE UNITS 120 BATTENS, BEAM MOUNTING BRACKETS, FLAT WEIGHTS, TOP CASTLES FOR 15'8" LOOMS, 13" AND 14" RAYON & SILK HEDDLES, BEAMS, AND MANY OTHER PARTS.

SINGLE DECK TWISTERS

7—Fletcher Motorized 1934 Model 6" Gauge. 4—80 spindle machines and 3—70 spindle with 6⅛" centers, 3½" wide cork-covered take-up pulleys, 4½" diam. motor pulleys, 3 HP General Electric motors with starting switches. 220 volts, 60 cycles. Machines in excellent condition. Excellent Bobbin Equipment Available for These Machines at Low Cost.

SPOOLS

40,000 3½" Fiber Head, 5" Trav. 2" Bar., for winding.
30,000 2⅝" Bakelite, 4 9/16" Trav. 1¼" Bar. for 5-B Spinners.
300,000 2½" Fiber Head, 3½" Trav. 1¼" Bar. For Winding or Shipping.

MOTORS

400 G.E. 3 hp. 220 volts, 60 cycles, in excellent shape.
250 2 H.P. 1200 R.P.M.
140 3 H.P. 900 R.P.M.
30 5 H.P. 1800 R.P.M.
We have some other miscellaneous motors in various sizes, phases, and speeds.

CREELS 1 Warp Compressor—1000 Ends 1 Universal Magazine Type—312 Ends

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1—Brinton T.W.R. Knitting Machine use 40 #3001D Dial Needles & 40 #3103C Cyl. needles.
1—Wildman Knitting Machine use 30 #3303D dial needles, & 30 #3301C Cyl. needles
1—Brinton Knitting Machine use 40 #3000D dial needles and 40 #3301C Cyl. needles.
1—Wildman Knitting Machine use 40 #3303D dial needles & 40 #3301C Cyl. needles.
1—Wildman Knitting Machine use #3303D dial needles & 30 #3301C Cyl. needles.
1—Cooper Cuff Cutter
1—Press table, 7 Mitter forms, brass
The above listed machinery is in excellent working order.

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9—C. & K. 52" Motorized 4 x 1, 30 Dobby, Side Feeler Motion, 1¼" Beams per Loom.
57—Crompton & Knowles Blanket Looms, 85" Between Swords—Excellent Condition.
48—C. and K. Automatic side-cam Looms Equipped with 4 Harnesses (Room for 8)—Complete, in operation up to a few months ago. 9 C. and K. Automatic Jacquard Looms Complete with C. and K. Jacquard Head No. 1960, 460 Hooks.

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4—Whitin 168", 5 years old.
2—German 168", Machines 10 years old.
All Machines Like New.

YARNS

16,000 lbs. All Wool Knitting Yarn.
12,000 lbs. 2/10 cut, 4,000 lbs. 3/15 cut. O.D. color in orig. 8" cones. 75% foreign, 25% domestic. 56's U. S. standard. Reg. knitting twist.
40,000 lbs. Fiberglas—225-2-5 Original 2 lb. Cones.
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Way below market price.

CONERS

5—No. 50 Universal Belt Gainer. All motorized 3-30 taper Anti-wear tensions. 6 spindles each machine.

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160,000 Hubbard.
60,000 4⅜" Head 4⅞" Trav. 2" Bar.
100,000 3½" Head 3⅞" Trav. 1½" Bar.
Hollow Gudgeon Stainless Steel.

SPINNER BOBBINS

27,000 Large package 3½" Bakelite Head 6" Traverse 1⅜" Bar.

5-B SPINNERS

17 Fletchers.
All individually motorized 3 HP, 3 phase 220-440 volts, 60 cycles, 84 spindles, 5¼" spacing, 3⅛". Whitin rings, double 2" feed rolls. Excellent condition.
Bobbin Equipment with machines.
8—Atwood 5-B Spinners.
All individually Motorized 2 HP, 3 Phase 440 Volts, 60 cycle motors. Bobbin Equipment with all machines. 4—100 spindle, 5¼" spacing, 3" Eadie rings, single 2" feed rolls. 4—112 spindle, 5¼" spacing, 3⅛" Whitin, single 2" feed rolls.

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25—High Speed Bahnson. Like New Condition.
1, 2, or 3 phase, ¼ H.P. Motors, 220 Volts, 2240 R.P.M., 60 cycles. H-J Type. Late Type Humidity Control.

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1—60" Fletcher—Motorized, 1—48" Troy—Motorized, 1—36" Schaum and Uhlinger—Motorized.

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8—Late type U. S. Textile Redraws, 80 Spindles Motorized Complete with Tensions, etc.

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2 HP Variable Speed Motor & Drive.
New—In Original Crate

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New Wet Out Bowl, or, Single Bowl

Raw Stock Scouring.
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8 Section Sargent Raw Stock Dryer

3 HP Motor & Fan for each dryer section.
Hinged Type Perforated Metal Conveyor.
Foxboro Temperature Controls.
New—In Original Crate

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48" Sargent Mixing Picker

Complete with Motor, Drive & Switches.
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ITEMS NS-B, F& D ABOVE
REPRESENT A SCOURING OR
WET OUT UNIT.

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Vacuum Extractor Tolhurst

42" Lead Lined Basket

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Approx. 25,000, 5½ Tra Slotted Dixon Drive
Base 1¾" x ½".

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Roth Long Draft Cotton Spinning Attachments

For Saco-Lowell Frames
Enough to equip 10,000 to 20,000 Spindles less a few Miscellaneous Parts.
Used—but some a very short period.

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Stainless Steel Lined. Tank 36" Diameter by 54" deep—Single Spindle.

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30' long — open type — maximum width 72". 2 Steam Boxes and 2 Heating Coils with traps.
Straight-away Model

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72" Width Cloth Roll—Chain Drive.

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All Stainless Steel—60" Basket
Made by American Tool & Machine Co.—Includes special Louis Allis 15 HP motor on main drive and auxiliary 1½ HP motor for treatment at low speed of 30 RPM with cycle control for reversing at low speed.

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BEAMER, 60" Van Vlaanderen
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BLOWERS, R. C. 8x5-3/5" 350 cu. ft. per min.
BOIL-OF MACHINES, NEW, 3 and 5 drum.
BOIL OFF TANK, 47"x72"
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DRY Cans, set of 8, 72"x23" dia. horizontal
DRY CANS, set of 32, 50"x23"
DRY CANS, 7 Morrison 48" high pressure
DRYING DRUM, 61" face x 24" dia.
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DYE TUBS, 6' Wood complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINES, Smith Drum Pocket type
DYEING MACHINE, Rochester Rotary 30"x20", 3 pocket 20 lb. capacity
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EXTRACTOR, 48" Burkhardt.
EXTRACTORS, Beam 50" & 60" BB
EXTRACTOR, K & G 48", rubber lined basket
FLAT FOLDERS, Elliott & Hall adjustable
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RIBBON FINISHING MACHINE
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SEWING MACHINE, 60 ABB with 72" carriage
SHEAR, Hermas, 4 knife 70" wide
2—STEAMERS 5x5x10'. Quick opening doors.
TENTER FRAME, Pin W&J 30'x220" wide
TUBERS—Paterson variable speed motors
TUBER, V.V. with doubling attachment
WASHERS, slop, New Stainless Steel
WASHER, Steel, G.L. Type
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28—Deliveries of Saco Lowell Drawing, 1923 Model, 4 Deliveries per frame, 12" coilers, Metallic Rolls, SPIRAL GEARS, New Trumpets, Hank Clocks. This drawing has recently been completely overhauled.

3—Kitson Single Process Pickers, 3 Beater (Downstroke Backley and two Kirschners), Equipped with Evener Motions.

4—Barber Colman High Speed Warpers and Creels, 432 Ends Per Creel, Warper Model HW.

4—H & B Speeders, 8x3½, 136 Spindles each, equipped with 5 Roll H & B Long Draft.

9—Saco Lowell Tape Drive Spinning Frames, 3" Gauge, 1" ring, 224 Spindles per Frame, Conventional Draft.

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35—Deliveries of Whitin Model H Drawing, 1935 Model, 12" Coilers, 5 Deliveries per frame.

16—Whitin 12" Card Coilers, Excellent Condition.

2—Barber Colman Drawing-In Machines, Style 2-SS, Motor Driven with motors.

30—Barber Colman High Speed Section Beams, 24" Head, 12" Barrell, 54¼" Between Heads.

1—Draper Slow Speed Warpers and Creels, Motor Driven with Motors.

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100 M—Tape Drive Spinning Spindles, Complete with Bases & Bolstors
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14—Draper 80" reed space Automatic loom 28 Battery Cam modern Modified D Individual motor driven ¾ HP motors. Mechanical warp stop motions completely equipped.

9—Attwood 5B Twisters 2½ in. rings 100 spindle. Individual motor driven.

7—Sipp Winders, 90 spindles each.

5—Knapp Warpers.

20—C&K 72" Automatic Bobbin changer, 2x1 silk & rayon looms, intermediate heads, 20 hook, motor driven, roller bearing, built 1925, 11,000 serial numbers.

4—C&K 60" 4x4 Reconditioned looms, 20 harness dobby, reverse weave, motor driven.

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COMPLETE BLEACHING, DYEING and FINISHING PLANT

OCCUPYING APPROXIMATELY 55,000 SQ. FT.

NOW OPERATING

32—80½" Reedspace, Draper Automatic Quill Change, Double Drive Looms, Individually motor driven, with electric stop motion; some equipped with 600 hook, double lift Jacquard machines.

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Manufacturing Plant
NOW RUNNING, CONSISTING OF
30 DRAPER AUTOMATIC LOOMS, WARPERS, SIZERS, QUILLERS, ETC.

4—C&K Looms, 4x1, 52" Reedspace, oversize shuttle box, 25 harness double index dobby, pick counters, individually motor driven, thoroughly reconditioned.

4—C&K Looms, 4x4, 54" Reedspace, regular box, heavy bar, 25 harness double index dobby multiplier, individually motor driven, as is.

20—#90 Universal Quillers and Coppers with and without bunch builders, completely rebuilt.

20—Model K Automatic Draper Looms, 47½" Reedspace, 20 hook dobby, motorized, completely reconditioned with feeler and cutter.

23—Model "E" Automatic Draper 53½" Reedspace with lacey top for 5 shaft operation, motorized, mechanical stop motion, completely reconditioned with feeler and cutters.

10—Model "E" Automatic Drapers 65½" Reedspace with lacey top for 5 shaft operation, motorized, electric stop motion, completely reconditioned with feelers and cutters.

80—Model "E" Automatic Draper 45½" Reedspace with lacey top for 5 shaft operation, motorized, electric stop motion, completely reconditioned with feelers and cutters.

30—C&K 600 hook Double Lift Jacquard.
Eastwood and Sipp Warpers, 84", 72" and 60".
Cone Creels up to 800 ends.

6—Humidifiers.

14M—Automatic Quills, 8".

9M—Automatic Quills 7⅜".

3—Atwood 5Bs Doubler twisters, motorized, 100 spindles, 6 End.

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WANTED

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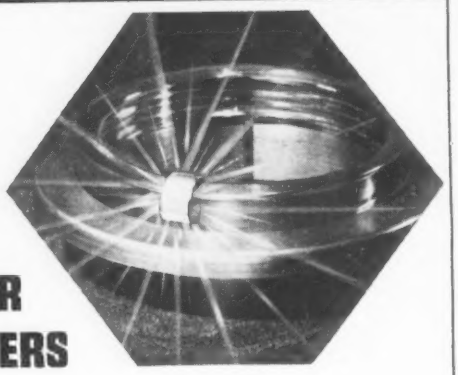

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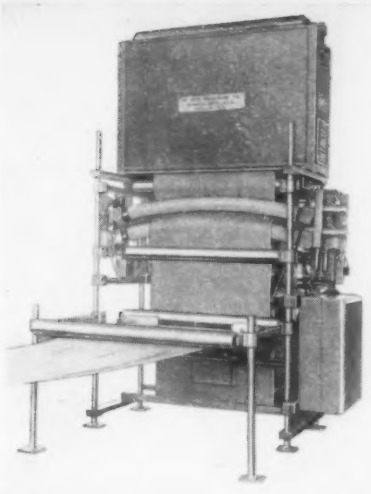

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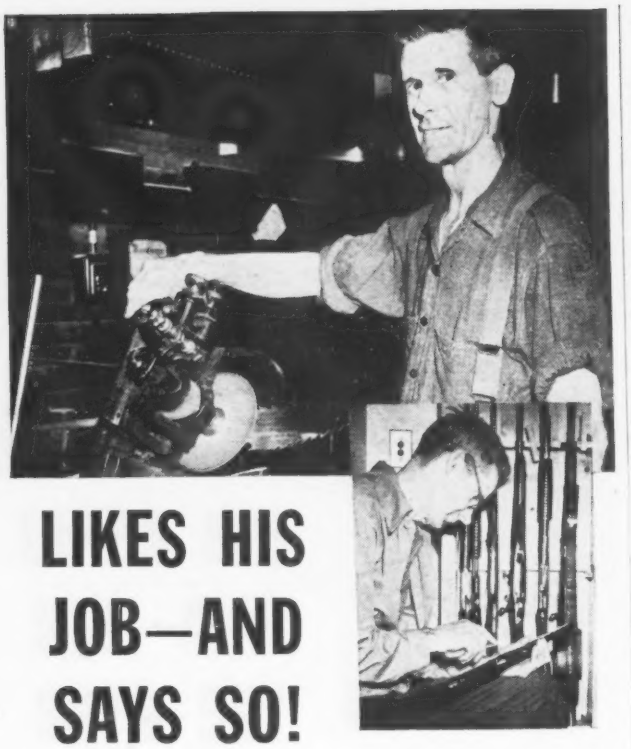

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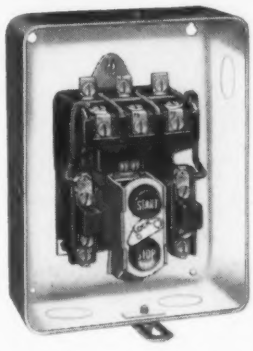

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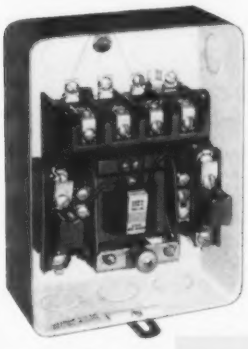

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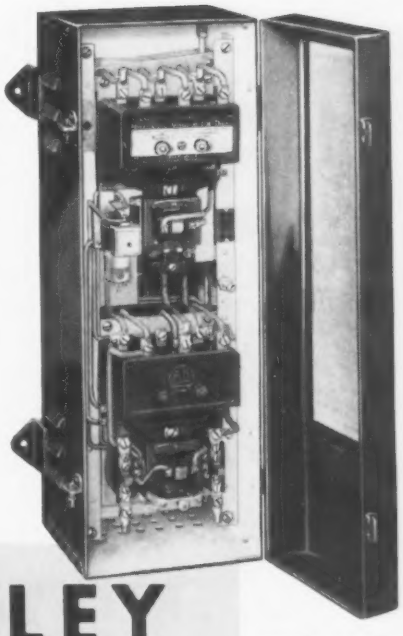

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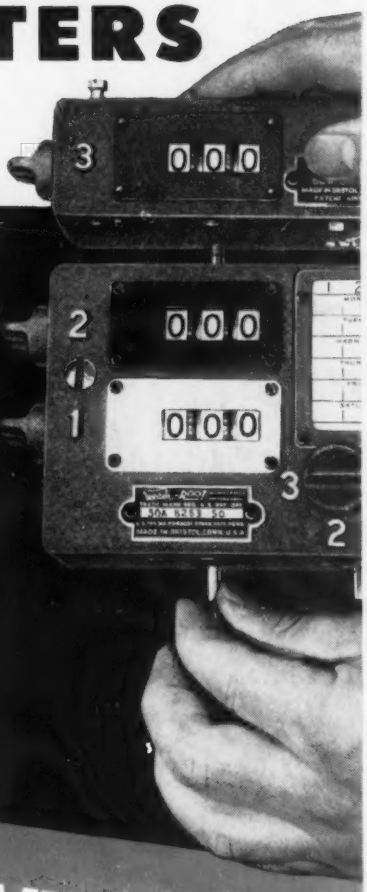

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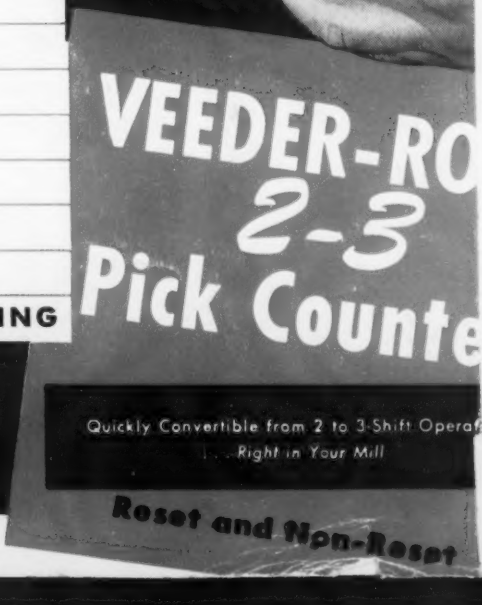

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